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L. L. LANGSTROTH

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Editorial Notes and Comments

Dr. Phillips on Foul Brood

Franz Richter, the man who culls from American bee-papers for Bienen-Vater, sent a letter of inquiry concerning foul brood to Dr. E. F. Phillips. In his reply, Dr. Phillips says Italians are little if any less immune to American foul brood than other bees. In the case of European foul brood, Italians are under certain circumstances certainly more resistant to the disease than blacks. American foul brood is more difficult to combat than European. Where the European variety breaks out it is extremely virulent, but after a time its virulence seems to abate. The Alexander treatment, which is not recommended by the U. S. Department, gives satisfactory results only where European foul brood has lost some of its virulence.

Putting One Colony Over Another

The Alexander plan of putting a weak colony over a strong one in spring, for a time, has been a great success by some, and a failure by others. The advice is to handle the hives very gently, so that the bees may not be stirred up to mix together until they have obtained the same hive-scent. Perhaps it may be well in most cases to make sure on this point, by having wire-screen between the two stories for a few days. In that case there is no need of gentle handling, and there is no possibility of harm to either queen until the screen is removed. It is then to be replaced by a queen-excluder. What is perhaps better is to put the excluder on at the start, the wire-cloth over it, and then, after 3 or 4 days, merely remove the wirecloth.

Less troublesome, although not quite so safe, is the plan of putting one or two thicknesses of newspaper over the excluder. The removal of the paper is gradually made by the bees. There is no need to have any entrance from the outside to the upper story. The im-

prisonment of a weak colony for a few days, with the room of a whole story, can do no harm. Some think it better to put the weak colony under.

Gross or Net Weight of Honey

Just now there is quite a to-do over this matter among Canadian bee-keepers. Some say that when a customer buys a 5-pound can of honey he expects and should get a full-weight 5 pounds of honey. Others say it is the usual thing in buying packages ready put up that the weight of the package is included, and so "a 5-pound can of honey" should mean that can and honey together weigh 5 pounds. Probably it does not matter such a great deal which plan is adopted so long as there is no attempt to deceive the customer; only it is better that there be uniformity, and the final decision of our Canadian brethren, if they ever do all get together, will be watched with interest.

W. Z. Hutchinson's Increase Last Year

In the forepart of June, as he relates in the Review, Editor Hutchinson had, last year, 20 colonies that he says were really 3-frame nuclei, also 500 empty combs, and about July 1 he bought 10 colonies of bees. With this capital to work on, he had in the fall 41 colonies of bees, 70 brood-combs filled with honey, and so far as the report shows, not a drop of salable surplus honey.

A beginner could have increased the 30 colonies to 82, with at least some honey to put on the market, instead of having it all in brood-combs. Not only could a beginner have done so, but the average beginner probably would have done so. And therein Mr. Hutchinson showed himself not a beginner, but a veteran. The beginner who should increase to double the number of colonies that Mr. Hutchinson reached, would go into winter quarters with

weaklings, in all probability, and come out in the spring with a less number than would Mr. Hutchinson, those that did come through needing tender nursing.

Mr. Hutchinson says fall found him with 41 colonies in 10-frame hives; combs fairly loaded down with honey and stocked with young bees; and up to March they were wintering perfectly. For every pound of honey in those 70 brood-frames he probably will have returned at least 2 in surplus, if not 5, and the probability is that in the coming season he will not be disappointed in his expectation to make things "hum."

And all this is set down especially for beginners to think over.

Weight of Queen-Bees

As may be found reported in Bienen-Vater, Ph. Reidenbach has for years weighed all his queens, and he finds the weight of a virgin to vary from 150 to 210 milligrams, while the weight of a fertilized queen is from 230 to 300 mg. So when he wants to decide whether a queen is a virgin or not, he weighs her, and finds whether she weighs less than 210 or more than 230. His chief object in weighing is to select the heaviest queens as being the most prolific to breed from.

Herr Reidenbach is considered good authority, but one may be pardoned for questioning the wisdom of depending chiefly, or indeed very much, upon the weight of a queen in making selection. One of the most prolific queens, if not the most prolific queen, the writer ever had, was one of the smallest and lightest. Neither is it certain that the most prolific queen is always the best. A queen which lays 25 percent more eggs than another is no better than the less prolific queen, if the workers of the latter live 25 percent longer than the workers of the former. Then there are other important qualities to be considered.

Bees Most Immune to Foul Brood

In this country and in Australia it seems to be the general opinion that Italians resist foul brood more successfully than blacks. At least some authorities in England hold the same

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view. Of those in all these English-speaking countries who do not agree with this view, there are perhaps none who think blacks more immune than Italian; they merely think there is no difference. On the other hand, it seems to be largely the opinion in European countries that immunity belongs to blacks rather than Italians. Is it not possible that both are right?

In Germany, and especially in Switzerland, care has been given to improve the black race, and the Swiss leaders are doing their best to drive out all Italian blood. Just the reverse has been the case in this country. It is just as hard to find pure blacks in America as it is to find pure Italians in Switzerland. What more natural than that the most vigorous bees will be found to be Italians in America, and blacks in Switzerland? And we may yet find that the bees most resistant to disease are not so much those of any one particular race, but those of greatest vigor, whether they be blacks, Italians, hybrids, or what-not.

Two Queens in a Hive

Interest in the matter of having two queens in a hive is not so great as it was. It is now pretty well understood that it is a thing practically impossible to have more than one vigorous queen laying at the same time in the same brood-nest. An old queen and a younger one may live peacefully together—a thing that has been known for a long time.

To have two queens in the same hive, especially in spring, sounds to a beginner like a very attractive thing. His first thought is, "Two queens in a hive! Just the thing. In spring a weak colony is slow at building up. Put in two queens, and have twice as many eggs, and the colony will build up twice as fast." Not so fast, young friend. The number of eggs and the amount of brood in the hive depend not alone upon the queen or queens present, but on the number of workers. No more can be taken care of than can be covered by the workers. A good queen can and will lay all the eggs any ordinary colony can take care of in spring, to say nothing of a weak colony. What would be gained by putting a dozen more queens in the same hive?

There is one real advantage, and perhaps only one, that could be had from two or more queens in the same hive. It would give an easy way to keep reserve queens over winter. But precisely in winter is the most difficult time to have two queens remain together. Even in the case of an old and a young queen, the old queen generally turns up missing in the spring.

Honey-Dew a Secretion or Excretion?

The Scotch authority, D. M. Macdonald, having said that honey-dew is not an excretion but a secretion, Dr. C. Gordon Hewitt, Canadian Dominion Entomologist, and Dr. E. F. Phillips, of Washington, both appear in Gleanings, and say emphatically that Mr. Macdonald is incorrect in saying that honey-dew is largely a plant secretion,

and in part a secretion from the nectaries of aphids.

Dr. Hewitt says: "Honey-dew is an excretory product of the digestive tract of the aphid which is naturally expelled by the usual aperture."

Dr. Phillips says: "All observations up to the present time indicate that the honey-dew of aphids is an *excretion* passed through the digestive organs of the body, and is a residue of the juices sucked from the various food-plants for the purpose of food."

Neither the taste nor the appearance of honey-dew will be changed by our knowledge of its source; the only difference it makes is as to our notion of its cleanliness. On this point Dr. Hewitt relieves our minds by saying:

I entirely fail to understand why the idea of its being an excretion instead of a secretion should be repellent to any one; it is merely changed cell-sap, as also is honey, both of which undergo a change in the digestive tract of the insect. The difference between an excretion and a secretion is really not so great as at first sight appears. The cells of an animal's body produce certain chemical substances according to their nature. The cells of the salivary glands produce by their activity a *secretion* known as the saliva; the wax-cells of the aphid and of the bee produce a *wax secretion*. Many of the cells of the body extract waste substances from such of the body fluids as the blood, etc., and in turn excrete these substances into the digestive tract or the kidneys, or even in the case of sweat-glands on the skin of the animal. Both secretions and excretions may be the result of cell activity. Of course, the term excretion is frequently used to indicate waste products which have never gone through the cells but have passed through the alimentary canal in an unaffected state; that is not, however, cellular excretion.

Bait-Sections in Supers

It is a very generally accepted view that it is a desirable thing to have in the first section-super given to a colony one or more bait-sections, or sections that have been partly filled the previous season and the honey emptied out by the bees. There are some, however, who object that a section which

has been kept over winter is not fit to be used again. In any case it will not do to use "any old thing" in the way of a section. A section that has been left on late and is discolored with propolis is not fit to be used. It should be clean and white, so that when filled it can not be distinguished from its neighbor which started with fresh foundation.

Opinions differ as to how baits are to be used. Just what is best depends upon the object in view and the number of baits on hand. One says, "Put a bait in each corner of the super, so that more even work may be done. Without any baits the central sections are finished first, and the corners last. If we can get the bees started on the corners first, we will have more even work, and the central sections will not be darkened while the corners are still unfinished." Another says, "Bees are not very likely to start in a super at more than one point at a time, so even if there is a bait in each corner they may start in only one of them. Of course, it is still true that the corners will all be finished sooner than they would be without baits. But my chief object in using baits is not to get even work so much as to get early work. There is no question that a bait in the center will be begun on sooner than one in a corner, and the difference in time of beginning in the two places might make all the difference between swarming and not swarming."

As already said, the number of baits on hand is a factor. A man with 100 colonies might have 100 baits, or he might have 400 or 500. With 100 baits he cannot put a bait in each corner of each first super, but he can put one in each center. With 400 he can put one in each corner, or he can fill 3 corners and put one in the center. If he wants to take the greatest advantage of his baits to hurry beginning and prevent swarming, he will probably put the 4 baits in the center in a block.

Miscellaneous News-Items

German Bee-Keepers' School

This first school of its kind in Germany is located at Preez, Holstein, with ample grounds, residence for the director, dormitories for scholars, etc., established at a cost of nearly \$9000. At a moderate expense a full course is offered in the theory and practice of bee-keeping, with a sufficient apiary for the purpose.

"A Glimpse of Elysium"

This is a nice 6x9 inch pamphlet of 20 pages and cover, brown-cord tied, being a very neatly printed and gotten up souvenir edition of a paper by Hon. Eugene Secor, of Forest City, Iowa, read before the Iowa State Horticultural Society at its last annual meeting held in Des Moines, Dec. 8, 1909. It also contains a splendid picture of Mr. Secor. It closes with a characteristic

poem, entitled, "Let Me Go Hence in June." The whole is written in Mr. Secor's best style, as usual.

Miter-Box for Cutting Foundation

Rev. G. T. Willis has been using with much satisfaction a miter-box for cutting starters of comb foundation to be used in sections. A bread-knife does the cutting. An item in the construction is worth considering. In making the miter-box, he does not leave a smooth flat surface at the bottom for the knife to cut down upon, but continues the saw-kerf down into the bottom for the depth of 1-16 of an inch. This allows the knife readily to make a cut clear through all the foundation, whereas with a smooth flat surface the cut will not so readily be made clear through to the bottom. The knife is kept wet so it will not stick; it is put

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in with the handle toward the operator, and close up against the wood, and then with sufficient pressure the knife is drawn toward the operator and a single stroke does the work.

Yellow Sweet Clover

According to R. L. Snodgrass, in Gleanings, the time to sow sweet clover in Kansas is any time between Dec. 1 and Feb. 1, as the seed germinates best if it freezes a few times in the ground. He values especially the yellow variety, as will be seen by the following:

There is no other clover that is such a soil-renovator as sweet clover. I have been pasturing my clover ever since one month after I cut the wheat. When I turned my cows on it they doubled the flow of milk, and it is still green as it can be at this writing, Dec. 5, and my cows are still grazing on it—the white clover. I have also a 15-acre field of the yellow variety on rented ground that is about one foot high, and just as green as in mid-summer. I haven't turned the stock on this yet, but expect to do so soon. I prefer the yellow variety to the white, as it is an earlier bloomer and makes more pasture, as it will stand closer grazing. The hay is also much finer, and cures more quickly, and therefore is ready to stack much sooner than the white; and I believe, too, that the stock eat it more readily.

Now, the most important feature of it all is that it is an earlier bloomer by 2 or 3 weeks than the white, or alfalfa either, and consequently it puts the bees in good condition for the alfalfa honey-flow; and if the first crop of alfalfa fails to bloom, as is usual in Kansas, the yellow sweet clover lasts until the second crop of alfalfa is in full bloom.

"Am Bienenstand"

Under the title "Am Bienenstand," which might be freely translated "In the Apiary," a German bee-book has been received which is written by August Ludwig, and contains 140 clearly printed pages with 109 illustrations. It is published in paper covers for 25 cents, by Fritz Pfenningstorf, Berlin, Germany.

In some things there is a difference between the teachings in this work and the usual teachings in this country, and in many things the teachings are the same. It is reckoned that in moderately favorable years, with suitable pasturage, there will be a harvest of 20 pounds per colony and 50 percent increase. That does not look very good to an American bee-keeper. But when he is told that prices are such that this would mean a yield of \$5 per colony, he does not feel like commiserating his German brother.

The size of frame unhesitatingly recommended for all hives is 40x25 centimeters (15.75x9.84 inches) *in the clear*. The frame is hung with the larger dimension horizontal, 9 frames are used, and the hive is called a "lager-beute" (a flat or lying hive), and if the larger dimension is vertical, 12 frames are used, and the hive is called "Staenderbeute" (upright hive). This latter gives about the same comb surface as 13½ Langstroth frames, and ought to satisfy a Dadant for room.

The advantages of having hives scattered in the open as in this country are considered, "yet over and against these advantages stand many more and much greater disadvantages." Chief of these are the dangers of stings and robbing. An American bee-keeper will feel a bit amused to be told that every hive opened invites robbers, and this may

be so bad that by the time the second or third hive is opened the work must stop so as not to endanger the whole apiary, for robbing has already become so bad in many cases that whole apiaries have fallen a sacrifice to it. In spite of this our large bee-keepers find little difficulty in keeping up the work all day long, even when little honey is coming in.

Frames are wired vertically, and there may be a question whether we would not do well to return to the same fashion. But it sounds a little strange to be told to let the foundation come down within an inch or so of the bottom-bar in each brood-frame so as to leave a space for the bees to build drone-comb.

Before and After the Snow-Storm

I send herewith two photographs of the apiary on my fruit-farm. One shows the hives (which contain 14 frames in the supers) before the last snow-storm,



BEFORE THE SNOW-STORM.



AFTER THE SNOW-STORM.

and the other shows the same hives after the snow-storm. The hives have frequently been covered or buried in snow like this, and yet the bees came out in good condition in the spring.

You notice that the covers of the supers are held on with a hook which prevents them from blowing off. Beyond the apiary in the first photograph you can see my barn and apiary where I keep 200 flying homing pigeons.

F. D. CLUM, M. D.
Cheviot, N. Y., Feb. 8.

Foul Brood Items

Charles Stewart, one of the New York foul-brood inspectors says, in Gleanings, that in both American and European foul brood, the intensity of the odor varies greatly. He has seen yards where one could smell the disease before reaching the yard, while in others, where the disease had lost some of its virulence, one could get the odor only by putting a comb close to the nose.

In European foul brood most of the affected larvae die just previous to the proper time for capping. (E. W. Alexander says when they are 2 to 4 days old.)

After disinfecting thousands of hives in years gone by, just as good results are now obtained without disinfecting, merely treating the diseased colonies in their own hives. Mr. Stewart says:

"Formerly, it was thought necessary to shake again in 3 or 4 days; but we find the average number reinfected is about 1 to 10, so we prefer to watch these colonies treated, and treat the tenth one rather than all of them a second time."

Foul Brood Law in Switzerland

The following is a translation of the Swiss law on foul brood, lately passed by the government of Switzerland. It shows that the question of foul brood is being solved by other countries, and that some of our States are not staying in the front row. Let us not get too far back; the world is apparently moving ahead.

The translation was made by Mr. C. P. Dadant, from the French, as taken from the *Bulletin de la Suisse Romande*, of which he is a regular contributor, and reads as follows:

The Federal Council of Switzerland passed the following law, under date of Dec. 3, 1909:

1. Foul brood among bees (stinking, or otherwise, and pickled brood) is hereby recognized as an infectious, contagious disease, presenting a general danger; it is inserted as No. 12, in the list of epizooties mentioned in Article 24 of the regulations of Oct. 24, 1887, upon policy measures to be enforced against such diseases.

2. The separate Cantons shall designate competent persons inspectors of foul brood, who will order and superintend the treatment and disinfection of diseased colonies, and shall inspect diseased apiaries. The exercise of these functions may be committed by the Cantons to the associations of bee-keepers.

3. Every owner of bees suffering from foul brood shall make immediate declaration of it to the competent authorities. It shall be required to observe in every manner the instructions given him by the inspector or his delegates, lend his aid, as much as in his power, to the work of cleansing and disinfecting his apiary, and employ for this purpose such persons as may be in his service.

4. It is forbidden to sell, loan or give away colonies, hives or utensils from an infected apiary. The unoccupied hives and the honey receptacles and combs shall be enclosed so as to be out of reach of bees. No colony may

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be replaced in any infected hive before the latter has been thoroughly disinfected.

5. In any infected apiary the struggle consists essentially in the destruction of the germs of the disease. In view of this, the bees which took the infected hives shall either be killed by brimstone vapors or united in artificial swarms in swarming boxes, where they shall be set apart for 3 days, after which they may be put upon comb foundation.

The combs containing brood, or the remnants of dead larvæ, shall be destroyed by fire. All the other combs of diseased hives shall be melted up.

Such straw hives as have contained diseased colonies shall be destroyed by fire. Wooden hives or utensils that have been in contact with diseased colonies shall be washed with a 10 percent solution of soda in hot water; they shall then be submitted to the flame of a benzine lamp, or boiled for an hour in a 10 percent soda solution.

If the diseased colonies are located in a house-apriary, all parts of the building that may have been in contact with the disease—floors, tables, supports, etc.—shall also be washed in a soda solution, or painted with linseed oil paint. The soil in front of the apriary shall be spaded, or in case of impossibility, it shall be disinfected.

6. The foul brood inspectors shall be permitted to examine all the apriaries situated in an infected district, in order to detect the presence of the malady.

7. Violations of the above law shall be punishable by a fine of from \$2 to \$100, according to the police regulations concerning epizooties. The regulations of the penal code shall be applicable to those who propagate the disease by malevolence.

Our Front-Page Pictures

The following paragraphs tell something about pictures of apriaries shown on the front page this month:

No. 1.—Apriary of J. J. Hangartner

Enclosed find a picture of a portion of my bee-yard, and myself standing in the front. I have 120 colonies, but last season was the poorest in the past 28 years. I received only about 800 pounds of comb honey. But all the colonies are in good condition. I winter my bees out-of-doors, and have lost very few as a result of outdoor wintering. I have all large chaff hives, making them myself as increase demanded, which you will notice in the picture. J. J. HANGARTNER.

Marion, Wis.

No. 2.—Apriary of A. Rozell

I am sending a small picture of our apriary in Los Angeles County. Now, Mr. Grigsby may find just a little fault with me for doing so, but Mr. Grigsby and I do not think alike on the picture question. I think you are doing about the right thing, and treating those who have small and large apriaries fairly.

The picture represents a rather large apriary, the whole of which is not shown, at least a third not being in view, to the left hand. It may please many bee-keepers to look at this picture, and I would like very much to see Mr. Grigsby's by the side of it, thus to see how it would "stack up" by the side of his. It would hardly do for many to have the Bee Journal devoted entirely to solid reading—we want some variety in its make-up—pictures, advertising, humor, and the work in the apriary. I think, Mr. York, you're "on the job" pretty well.

Los Angeles, Cal., Nov. 20. A. ROZELL.

No. 3.—Apriary of Edwin Corwin

I am sending 3 picture postal cards, two of myself holding a 12-pound swarm of bees, and one of Dr. C. L. Walton, of Chicago, having said swarm in my yard. In August there was a great deal of buckwheat sown in my locality, and when the bees commenced capping the 3 and 4 supers of honey they would swarm. I wintered 125 colonies. The season wasn't good until buckwheat time, and then it was fine—bees stored honey fast. I secured 2000 pounds of extracted and 3000 pounds of comb honey, besides fighting black brood all summer. The bees, in this locality, have had black brood for 5 or 6 years. It has killed some whole apriaries—James Heddon's, at Dowagiac, and lots of others. I am located 6 miles from James Heddon.

EDWIN CORWIN.
Dowagiac, Mich., Dec. 14, 1909.

No. 4.—Apriary of Chas. Wallin

I will send you a picture of my bee-yard which contains 10 colonies. The two "fellows" you see in the picture are my brother and myself. My dog, Carlo, is close to my right. The building you see is the living house. I had good returns from my bees the last two years. I have learned a good deal by reading the American Bee Journal.

St. James, Minn. CHAS. WALLIN.



No. 6.—Apriary of James B. Trease

I will send a picture of my apriary of 70 colonies. Only a part of them can be seen—they are in an orchard. The supers have been taken off.

JAMES B. TREASE.
Shelton, Wash.

No. 7.—Apriary of O. B. Griffin

I send a postal card of my bee-yard with part of the surplus honey crop still on the hives.

O. B. GRIFFIN.
Caribou, Maine, March 7.

No. 8.—Apriary of H. H. Fay

This is a picture of the bee-yard of H. H. Fay, of Epworth, Iowa. Mr. F. failed to send any descriptive matter to appear with the picture.

Sweet Clover as a Soil Restorer

We have received the following from Wm. M. Whitney, of Batavia, Ill., dated Feb. 16, 1910:

EDITOR AMERICAN BEE JOURNAL:—I here-with enclose a clipping from an article entitled, "Darby's Talk to Farmers," in the Feb. 10th number of the Cincinnati Enquirer. Of course, all bee-keepers are supposed to know the value of sweet clover as a honey-plant, but I am inclined to think there are many "farm bee-keepers" — as some are called—who yet regard it a noxious weed, and treat it as such. Knowing little or nothing of its fertilizing value, they greatly underestimate it as a farm product. Experiment Stations throughout the country are beginning to catalog it among the most valuable plants. Strange, isn't it, that it should take so many years to gain recognition? But so it is, and ever has been, with almost everything valuable in life.

WM. M. WHITNEY.

The clipping enclosed by Mr. Whitney reads as follows:

Sweet clover is fast coming to the front as a soil restorer. Until the last few years it has been classed as a troublesome weed by many. I have been experimenting with the different clovers for several years as to their value as cured hay, grazing, and as a crop to turn under as green manure. As cured hay sweet clover comes second to alfalfa, which is the finest feed we grow in the Ohio Valley. As a pasture, sweet clover is away ahead. On land that is very thin, and on which there is little humus, if sown to sweet clover and blue-grass there will be a good stand of pasture the second season, and if pastured lightly a heavy sod is formed rapidly. Then after the fourth season it may be pastured regularly, and it will continue to improve as green crop to turn under. I have not been able to find anything near its equal. Where sown thickly it makes a very heavy growth to turn under, and as this decays and is converted into humus, the nitrogen-gathering bacteria that live on the roots of the clover, release the nitrogen that was gathered while the crop was growing.

The bitter taste that sweet clover has is some against it, as all stock do not take to it readily, but this bitterness, caused by a property contained by sweet clover known as cumarin, prevents the stock that feed on the clover from becoming bloated. Hence, anything that makes a good food is a good fertilizer.

Of course, all who have read the bee-papers during the past 10 or 15 years, know what a fine honey-plant sweet clover is. In some parts of the country it is made into most excellent hay. As noted in the above clipping, it surely is a splendid soil fertilizer and renovator. Score a whole lot for the once despised sweet clover!



EDWIN CORWIN'S APIARY AND SWARMS.

No. 5.—Apriary of Jay Smith

This picture shows the apriary of Jay Smith, of Vincennes, Ind. He wrote some time ago that the bees were wintering well on honey-dew.

Fifty Years a Reader.

I am sorry to say that my connection with the American Bee Journal must cease with the end of my present subscription. I have read it for 50 years with pleasure and profit; but a malignant cancer will end my life in a few days. With great sorrow I bid you an everlasting farewell!

J. S. HUGHES.

Chipley, Fla.

American Bee Journal

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Your Sweets, But Not You

We are indebted to the courtesy of Mr. Eugene Libby for the following brightly written lines, clipped from the Portland, Maine, Telegram. The caption is perhaps the best comment upon the sad refrain, "They want your sweets, but they want not you," but let us thankfully remember that that sad refrain is not of universal application:

"TIS TRUE, 'TIS PITY, PITY 'TIS 'TIS TRUE."

Roses sweet in your dainty dresses,
Royal pansies in velvet gowns,
Fair young wheat that the wind caresses,
Brown-eyed daisies with golden crowns;
And oh, my drooping and rich ripe clover,
Your hearts are heavy, but not with dew!
Your ardent bee is a faithless rover,
He wants your sweets, but he wants not
you!
All ye wilding and winsome beauties,
Rich in spoils for that bandit crew.
Bee and butterfly, whose pursuit is
Foraging sweets, if you only knew
Why they waver, and fit, and hover,
The same forever and aye is true!
The reason is one, the wide world over,
They want your sweets, but they want not
you!

—CLARA MARCELLE GREENE.

Cocoons and Wax-Moths in Hives

Early last spring I discovered cocoons of wax-moth in the corners of a dovetailed hive. I set a new hive close to the old one, lifted the old hive and carefully set it on the ground, brushed off the bottom-board of the hive of dead bees and cocoons, set a new hive-body on the bottom, then took the frames of the old hive and put them into the new one, put on a cover, set the old hive close in front of the new one, and shoved the bees into their clean home. They did not seem to mind, and went to work at once.

OHIO BEE-WOMAN.

It was well enough to get the old hive emptied so that the cocoons might be cleaned out, but their presence was an index that there had been something still worse—worms in the combs. A colony ought never to be suffered so poor and weak as to allow the worms tranquilly to plaster cocoons in the corners of the hive.

A Successful Wisconsin Bee-Woman

Attendants upon the bee-conventions at Chicago will not have failed to see one sister almost always there, sitting quietly with little or nothing to say, but intent upon all going on. When told, "That is Miss Mathilde Candler, who keeps 300 colonies of bees," one is sure to take a second look at her, and if one engages her in conversation one finds that what she says is well worth hearing. The following story of her beginning and growth as a bee-keeper, which is taken from the Bee-Keepers' Review, cannot fail to be of interest:

"How did you ever come to take up bee-keeping as a business?" is a question I am often asked. It seems to surprise some people to find a woman who is a bee-keeper, although I do not know why. Woman is taking a more or less active part in all the world's work, and I cannot see why she may not become interested in bees, or anything else, for that matter, in which human beings

may be interested. It somewhat surprises me that it surprises them.

Before I had bees I was a school-marm, teaching a country district school. One day I saw an advertisement in an agricultural paper of the "A B C of Bee Culture." Having always had a liking for the objects of Nature—birds and bees and bugs and beetles and flowers and trees, of which I used to gather specimens to examine with a microscope—I became interested, and resolved to send for the book. Reading it brought on the worst kind of a bee-fever, not only the wonders of bee-keeping of which I read there, but also the greater independence which I thought I could secure attracted me, and in the spring of 1890 I bought 2 colonies of bees in box-hives.

Now began my troubles. O those first lessons in bee-keeping! Stings! I wonder if any other beginner was stung any worse, or any more, than I was that first season. I waded right into it, and I was a sight. I actually cried with the pain. I even wished that I had never seen those horrid bees, and that something might happen to ride me of them forever; although I never would have confessed myself defeated to any one.

But nothing happened, and after a time I learned better how to handle them. I bought some rubber gloves, made a good bee-veil, and learned to keep the smoker from going out. My enthusiasm returned. I subscribed for a bee-paper, and read eagerly the articles from the pens of old and experienced bee-keepers. Do all beginners read those first? Does not every enthusiastic beginner (and what one is not enthusiastic) expect to become one of these experts some time, and does he care very much for reading beginners' reports?

I also bought several other bee-books, and later subscribed for all the bee-papers. I would have been the loser had I not done so, for I think I have learned something from each one more than enough to pay the subscription price during my whole bee-keeping life. One bee-paper alone by no means contains nearly all there is to tell of bee-keeping experience and information. A beginner should read them all—and I am yet a beginner.

I made a visit to a neighboring bee-keeper where I saw my first patent hive, and secured a sample, after which all my earlier hives were made. I also visited Mr. France, at Platteville, and saw how they handled their bees there. It was a revelation to me, and a most valuable lesson. Actual demonstration is way ahead of any written description or instruction in a bee-book. A beginner can do nothing more profitable than to visit some near-by brother in bee-keeping.

I worked with bees in the summer, and attended an Art Institute in Chicago in winter, having given up teaching as soon as I had bees enough to give a little revenue. I kept only between 60 and 70 colonies, and thought

that was about all my locality could profitably maintain. Now I have about three times that number in the same locality, and it is only an average one; but the management is different.

Financial losses and difficulties finally compelled me to give up my art studies. About this time there appeared the editorial in the Bee-Keepers' Review urging the keeping of "more bees." I resolved to do so, in the hope of recovering what I had lost, and increased to about 100 colonies. The following spring I commenced an out-apiary about 8 miles from home. I started it with only 18 colonies. That was a mistake. I should have taken half the colonies in the yard. I had no money with which to buy hives and fixtures, but I had a lot of discarded hive-bodies, and I resolved to use these in my out-yard. That was another mistake. I should have used them in the home-yard where I could better watch them and give the attention that old and worn-out hives sometimes demand.

I had an opportunity to buy some cheap lumber on credit, and had some nice bee-sheds put up, three in number, 6x16 feet. Having neither covers nor bottom-boards, I put the bees in these sheds or house-aparies, and increased until they were full, and the rest I put outside.

It is uphill work building up an apiary without covers or bottom-boards. I used dirt bottom-boards, sawdust bottom-boards and wood; and, for covers, many hives were just covered with paper and any boards I could find to use, weighted down with stones so the wind could not blow them off. Colonies do not become very strong under those conditions. And in the fall I had a lot of weak colonies to unite; and in the spring a lot of dead or very weak ones, caused by mice getting into the hives. But every year I made some advance, until now my colonies are in pretty fair shape, and I have increased both yards until I have about 300 colonies.

I used to do nearly all the work alone, and did much for which I was neither fitted nor strong enough. Then I got a neighbor boy to help me during part of the school vacation. Now I employ help whenever I need it, provided I can get it. Help is always hard to get; especially help in a bee-yard, and I often have to do everything alone, and work from daylight until dark. Lifting is the hardest part of bee-work for a woman, and I think I've done my share of it.

I keep no horse, but go to the out-apiary by train, as it is near the railroad station. Board is cheap, and I remain until the work is finished, doing only what seems most necessary at the time. Of course, with so many bees, and insufficient or no help, I cannot hope to have things as they ought to be, or as I would like to have them. I just do as well as I can, and let it go at that.

MATHILDE CANDLER.

Cassville, Wis.

Honey as Toll for Stings

From 10 colonies, in 1909, I took 260 pounds of salable honey. I did not weigh the unfinished sections, taking them as toll for numerous stings.

OHIO BEE-WOMAN.

Sketches of Beedomites

A. J. KING

It seems that after I had prepared a short sketch of the life of Prof. King for Gleanings in Bee Culture, the editor of the American Bee Journal wrote the Professor for a sketch of his life, not knowing that I had about that time submitted my "copy" on the same subject to Gleanings. Now it happens that Prof. King asks me to send the "Old Reliable" the "little biographical sketch" Mr. York wrote for, so it is in this way that I come to write up the

veteran bee-keeper a second time within a few months. In doing this I now give a more complete resume of his work.

Albert J. King learned to handle bees when he was quite young, for bees were kept on the family homestead in northern Ohio long before the advent of movable-comb hives. The bee-keeper of the family was his brother, Nelson H. King, who was quite a genius, and it was he, I believe, who invented the American bee-hive. The invention of this hive made the two brothers men-

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tioned, and a third, Homer A. King, famous in the bee-world of a generation and more ago. The subject of this sketch had little to do with the developing of the first bee-hive factory ever started—it was H. A. and Nelson King who industriously pushed the American bee-hive to the front in the 60's; their factory at Nevada, Ohio, was kept running night and day to supply the demand. About this time Albert went to California to introduce the King hive into that State. There he found the Harbison hive in full swing, and it remained so until the early 70's. In the Golden State the latter brother fell into the ways of a pedagogue, and for some years was engaged in tutoring the savage young Californians in the walks of every-day life, especially in "teaching their young ideas how to shoot." It was in this way that I fell under the sway of the bee-keeper school-master.

It was around the middle 60's that a school-house was built in our district, and a gentleman from Ohio, who had recently moved to the district, was instrumental in inducing Mr. King to come to the district, with a promise of installing him master of the new school. The latter came, built himself a home, and—only to find that his would-be friends went back upon him, and were going to elect some one else teacher! Just then an election of school trustees took place which upset the plans of the tricksters, if they might be called such. On the new board was the writer's father, Mr. A. D. Pryal, recently deceased, and he and another new member, Mr. John Kearney, I believe, saw that Mr. King was treated as he should have been—so he taught the school until he resigned some years later. It was in this way as a youngster that I became acquainted with this gentleman, who, a few years later, played quite an important part in the early history of bee-keeping in the United States.

After leaving California, Mr. King went East, and was soon associated with his brother, Homer A. King, in the publication of the National Agriculturist and Bee Journal. Later this paper was merged into the Bee-Keepers' Magazine. The first issue of the latter was published in the fall of 1872, and so, if it were still in existence, it would rank as the second oldest bee-paper in America. A few years later the senior brother withdrew from the publishing business, and the subject of this sketch continued the editorial management of the paper quite successfully until about 1885, when he sold his entire interests in the paper and supply business to others. Some of the best articles on bee-keeping that ever appeared in any bee-publication were published in the Bee-Keepers' Magazine, the editor being fortunate in securing the services of the leading solid weights in apicultural work of the times.

It was during Prof. King's editorial management of the Magazine that the great fight over the invention of the manufacture of comb foundation began. Mr. King found that the pretensions of the would-be patentee were groundless, and he went to work and in a masterly way made a clean expose of the whole affair leading up to the

invention of comb-foundation manufacturing, including the making of the embossed rolls, which are now used in the making of this most useful adjunct of the apiary. How soon we forget the past; 33 or 35 years ago the gentleman I write of was putting in his best efforts to give to the bee-keeping world the free use of comb foundation, and he did so. How few of today recall the time, or give him that meed of thanks he is so much entitled to. And it was he who also did much to popularize the bee-smoker. The times were ripe for this invention. In connection with the late Moses Quinby and T. F. Bingham (each separately), he perfected the smoker so that the ones in use at this time are much the same as the later products of A. J. King. And in the matter of improving bee-hives this bee-keeper was ever alert. He turned out several splendid hives that would have

helped to whet the appetite for honey. And in even more did he show his skill as an educator in the noble art of tending bees. While conducting his bee-publication and supply business, he instituted a bee-college, as it were, and had classes in apiculture at his office in New York. The students came from the city and adjacent country. Often after instruction in the "class" room an adjournment would be made to the roof-apairy above, where the practical side of apiculture would be demonstrated.

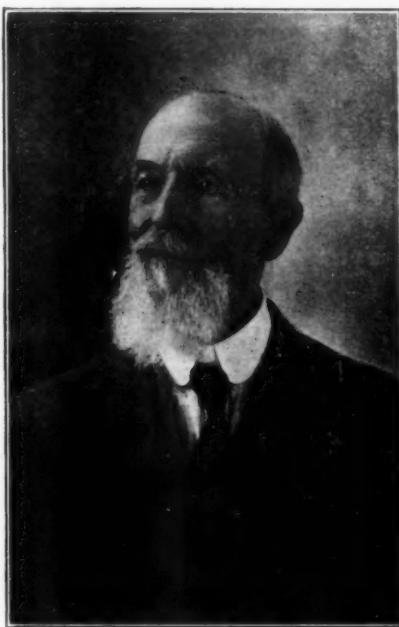
In 1873 Prof. King brought out a revised edition of his brothers' "Bee-Keepers' Text-Book," which up to that time had had the largest circulation of any bee-book ever published. He also prepared articles for several permanent works, notably for the Ninth or American edition of the great Encyclopedia Britannica. This article stands as a lasting monument to Prof. King's contribution to the bee-literature of this country.

Here I might mention that Prof. King's Practical College of Apiculture attracted a good deal of attention at the time; it was so novel to find such a school that many persons other than the news-gatherers came to see it. The "College apairy" occupied a space on the roof 25x75 feet, and I think I am free to state that many of our agricultural colleges at this time cannot boast of a larger or better equipment. This school—or college—apairy was illustrated and described in Harper's Magazine at that time. It was from the reading of an article that Prof. King contributed to the Scientific American that induced Cuban capitalists to secure his services in establishing a large apairy in Cuba. He had previously established several apiaries on the same island for other parties. About this time he was elected president of the Eastern Bee-Keepers' Association, but his absence in Cuba prevented him doing active work for the association.

Prof. King was a frequent exhibitor of aparian appliances and literature, as well as Italian bees and queens, at the American Institute in New York city, and on several occasions he was awarded the highest premium ever given an American bee-keeper. Several of the gold and silver medals bestowed on him he highly prizes at even this late date.

To illustrate still further the campaign of enlightenment in the modern field of bee-keeping he brought about, Prof. King was secured by Cooper's Institute to lecture on several occasions before the Farmers' Club, on "Modern Bee-Keeping."

Reverting to the invention of comb foundation, I might here remark that during Prof. King's hunt for evidence to overthrow the pretensions of the



ALBERT J. KING.

become standards among bee-keepers if it were not for the fact that American bee-keepers demand the lowest possible cost along with utility in all the appliances used in the apiary. This is owing, mostly, to the fact that the product of the apiary has to be sold at a price that does not warrant the producer spending much capital for equipment, etc. In England and on the continent of the Old World this is not so; there, costly hives are the rule. 'Tis true, perhaps, that a cheap hive will often allow a colony of bees to produce as much honey as the more expensive one, so, on the whole, the American bee-keeper is justified in being economical.

While in the great city of New York, Prof. King demonstrated that bees could be profitably and successfully kept on the roofs of buildings. There he maintained several apiaries; often reporters from the city press would visit some of these roof-apiarries and forthwith would appear "How doeth the busy bee" in Gotham. All of which attracted attention to the industry and

We have about 30 copies left of the book, "Langstroth on the Honey-Bee," of the edition just preceding the last. It is practically equal to the latest edition, and we will mail them so long as they last, for 90 cents a copy. (The regular price is \$1.20.) Or, we will send one of the above 90-cent copies with the American Bee Journal one year—both for \$1.75. Address the American Bee Journal office.

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Wagner claims as patentee of the comb foundation process, the former secured samples of comb foundation made as early as 1853, and which were exhibited in that year at the World's Fair then held in London, England. This invention, like many of the other very useful ones that modern bee-keeping is indebted to, had its birth in Germany, but, as in the case of the bee-smoker, honey-extractor, movable frames, etc., it remained for American ingenuity to bring them to the highest stage of perfection. It took a Langstroth and a King to give us a perfect hive and frame; a Quinby and a Bingham to give us a direct-draft bee-smoker that is the principle of all smokers now in use; a Weed, Washburn, and others to perfect the comb-foundation machine; a Root, Lewis, Peabody, and a few others to give us the extractor of today, though it must not be denied that in the case of the extractor we have to take off our hats to the work of a distinguished foreign genius who devised the automatic reversible honey-extractor—I refer to Mr. Thos. Wm. Cowan, of England, whose form of extractor will endure for all time, as the most useful invention ever given the bee-and-honey fraternity.

One of the most prized of all the premiums given Prof. King for his contributions to the bee-world, is the finely

wrought solid gold *Apis mellifica* bestowed upon him by a committee of the Paris World's Fair as a reward for his exhibit of the first volume of the Bee-Keepers' Magazine, which was edited by Homer A. King and himself.

Much more might be written of Prof. King, but the foregoing will suffice, except to state that up to a year ago he had taken an active part in tending bees. Failing health has compelled him to relinquish this cherished work. Today he is leading a quiet life at the home of his son-in-law in San Diego, this State. Both Prof. King and his good wife, whom I well remember for her kindly and queenly ways when I was a little boy, have each passed the 74th milestone in life's pilgrimage; while he has worked among much sweetness, still the cup of bitterness has been their lot on several occasions—of their 4 children, I believe, only one remains alive, Mr. Benjamin King, of Los Angeles. Their only remaining daughter died suddenly in San Diego a little less than 2 years ago, as announced in these pages shortly afterward. But it is the wish of the bee-keepers of this land, I am sure, that the remaining days of their lives may be as bright and peaceful as is the climate in which they dwell.

W. A. PRYAL.

Oakland, Cal.

With all due regard for Mr. Lyon's opinion on the matter, I, for one, do not believe that there is as much in the idea of spring dwindling being caused by adverse weather conditions in the spring; and rather feel more convinced each year that the trouble is simply an after effect of bad wintering. To be sure, I would not wish to be understood as advocating the idea that adverse weather conditions are not harmful to bees in the spring, but I mean to say that such a condition is merely a secondary factor at the most, in so far as it is responsible for causing spring dwindling. Let me illustrate:

Who has not noticed that whether bees are wintered in the cellar or outdoors, if the tell-tale marks of dysentery are around the entrances of the hives, that colonies so marked will dwindle away like snow in an April sun, while other colonies that are clean and nice will not be materially affected even if we have weeks of unfavorable weather in the spring? Take a colony with a bad dose of dysentery, and you may wrap up the hive with any kind of protection imaginable or practicable, and it will go "all to pieces" beside its sister colony which, healthy, but unprotected, continues to hold its own and even increase, although the weather conditions are the same in both cases. Other causes may also contribute towards spring dwindling, and at least one of these causes may be farther to trace up than the winter the bees may have passed through without actually dying.

Last fall 5 colonies were placed in the home cellar under the steps, all the rest at this yard being wintered outdoors. Four of these colonies have young queens, while in the case of the other it was only discovered by accident late in September that the queen was useless, and had been for some time, as at that date there were only a few scattering cells of normal brood, with patches of drone-brood here and there. At that late date the old queen was destroyed and a young queen on hand was introduced by shaking all the bees in front of the hive and then throwing the queen among them. I did not know for sure whether the queen was accepted or not, but carried the hive into the cellar with the others, with the idea of seeing how all those old bees would fare in the winter and spring.

Right here I wish to qualify what I mean by "old" bees, as much depends upon the conditions surrounding such bees, in so far as it affects their longevity. For a few years prior to the growing of buckwheat in our section, practically all honey-gathering was over with the clover flow, and as a result very little brood was reared at the latter part of the season. But the old bees in the hives were never very active during all this period of dearth, and consequently their vitality was not impaired to any great extent; and as for results in wintering, they invariably came through in good condition. Now with a fall flow this is all changed, as the bees work hard and are prematurely aged, as is the case in the clover or any other honey-flow. The old bees in the hive mentioned stored quite a large surplus from the buckwheat, while all

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ontario, Canada.

Control of Swarming

We are in receipt of a circular letter from the Ontario Agricultural and Experimental Union, announcing that, for 1910, apiculture has been added to the list of departments for experimental work. As there is no material as yet the first year to be sent out, the letter states that for this season the experiments asked for will be on the control of swarming, and the receivers of the circular are requested to write Mr. Morley Pettit, at Guelph, stating their willingness to help in the work in a careful and systematic manner. All so expressing themselves as willing to conduct an experiment, will be furnished with all instructions and specifications by Mr. Pettit.

I suppose that all Ontario bee-keepers of which the department has the addresses, will be receiving a copy of this circular, and as the list runs away up in the thousands, Mr. Pettit's appeal through the Experimental Union should meet with a response on the part of many. The fact of the Union at last recognizing bee-keeping as being on the same status as the various other agricultural industries that have been receiving attention so long, is a matter of congratulation on the part of the apiarists of Ontario, and with so capable a man as Mr. Pettit in charge of the bee-keeping branch, the calling should soon appeal in a different and more important light, than has been the case in the past.

Some time ago I mentioned in these columns how undecided the question was in regard to the manner of work to be done at the College by Mr. Pettit, when the latter ventured to ask the Ontario association when in convention assembled at Toronto, in November last. It appears to the writer that the work outlined in the circular referred to is a step in the right direction, and we may have reason to believe that this is just a beginning, and surely will be pardoned for being so egotistical as to have visions of the apiary department at Guelph, Ont., soon being in position second to none on the continent.

Any Ontario bee-keepers who may not receive one of the circulars, and who may chance to see this item, will no doubt confer a favor on Mr. Pettit by writing him of their willingness to help in the work he may outline for them.

Cause of Spring Dwindling

D. Everett Lyon, who conducts the apiary department of the snug little paper called the Farm Journal, says in the March issue that spring dwindling "results from the colony becoming chilled during a cold spell that may follow their removal from the cellar." Mr. Lyon does not say what causes dwindling in colonies that have been wintered on the summer stands, but I suppose it is but logical to suppose that he would assign the same reason as in the former instance.

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the while no young ones were being reared to supplement the waste. However, the 5 colonies were carried out of the cellar on March 5th, about a month earlier than is the general rule. To all appearances the 5 colonies were in perfect condition, but it was noticed that the colony that had the old queen last fall had a few spots on the entrance. A hasty peep revealed the fact that the young queen had been accepted all right, as there was sealed brood in the hive. As near as could be determined by the hurried look at the other 4, no brood was started, at least none was sealed, anyway. Now the first colony referred to is full of bees, but I expected that it would spring dwindle, and from present indications it looks as though I am not to be disappointed (?). All 5 colonies have a telescoping extension top, and are packed nicely on top of the frame; as to side packing in the shape of paper, etc., I would not pay 2 cents to have somebody cover all my hives that way in any spring, no matter how cold it might be.

Well, we have had some cold weather since the 13th up to this date (March 17th), but as to those 4 colonies—well, I may be a bit too sure, but I would not give a nickel to insure them against spring dwindling, even if the weather stays cold for two weeks longer. As to the other, it is a different story, and every time I pass by the entrance of the hive I clean out dead bees all bloated up that are obstructing the contracted entrance; and while at the job invariably some old worn-out ones will come out buzzing, seemingly anxious to rid the hive of their useless presence. Of course, that colony will spring dwindle, and the same cause that is responsible for the trouble in this case, is also responsible for thousands of others in the country every year. Bad stores, damp hives, and a multitude of other causes contribute to the death-rate every year, and so often the cause is wrongfully diagnosed as "spring dwindling."

Let me repeat that in 99 cases out of 100, if the bees have wintered perfectly, there will be no spring dwindling to amount to anything.

"There is No Place Like —"

The old saying, "there is no place like home," seems to be as true as ever in the majority of cases, even when the maxim is applied to bee-keepers who leave their homes in search of richer pastures. I am reminded of this in a letter received from Mr. Arthur Laing, some weeks ago, in which he mentions his intention of coming back to Ontario again this spring. Mr. Laing has for years been afflicted with the "wanderlust," and has in his travels visited Cuba and many States of the Union. His latest move was to sunny California, and from sundry longings I, myself, have for that warmer clime, I rather imagined that Mr. Laing would be enamored with the country, and not care to come back to "Our Lady of the Snows." However, it seems otherwise, as Mr. Laing says in his letter, "I am living in a land where for 6 months we have had sunshine and sand, and now

for about 6 weeks we have had rain. California is a nice country, but Ontario is nicer, and I am coming back."

Another extensive bee-keeper of eastern Ontario sold all his bees a year ago and went to the same country, and last fall he wrote to the one who bought his bees, that he was coming back again, as he preferred snow-banks in the winter to sand-storms. Since then he has come back and purchased his bees again at one-half more than he sold them for over a year ago. Say, judging by these testimonies they must have some drawbacks in California as well as here in Ontario; but lest this should stir up some Californian to attack this scribe, let me remind all with such intentions, that all I am saying is what the "other fellow" says, and, personally, I plead guilty still to having a longing to see the country under discussion.

Bees Wintering "First-Classly"

Before closing for this month, let me say that from present indications the bees are coming through the winter in first-class condition. Of course, it is too early to be positive in the matter, but at this date (March 18th) I have reason to believe that there is not a dead colony in my yards, and from reports of a number received by 'phone, the condition seems to be general in York County.

Clover is now being tried pretty hard, as we are having heavy freezing at nights with thawing in the daytime. However, we always have a siege of this weather in the spring, and in the great majority of cases the clover stands it all right, so we will not borrow trouble, and at present continue to be pleased at the splendid shape in which the bees appear to be.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bulk-Comb Honey Production—Our Ideal Frame

Numerous questions from prospective bulk-comb honey producers have been asked about the frame we are using, asking a more definite description of it, despite the fact that this frame has been described several times. With an attempt to make this more clearly understood, a rough drawing was made which shows a top-bar, end-bar and a bottom-bar, and it is hoped that the description following will save further enquiring letters, as I will not be able to answer them on account of the very busy season now on.

First, we will take the top-bar, which is really the only part of these shallow frames that is original with me, all the other parts being the regular Hoffman-style shallow-frame, except that we have, for years, also used a heavier end-bar to strengthen our frame for rough usage.

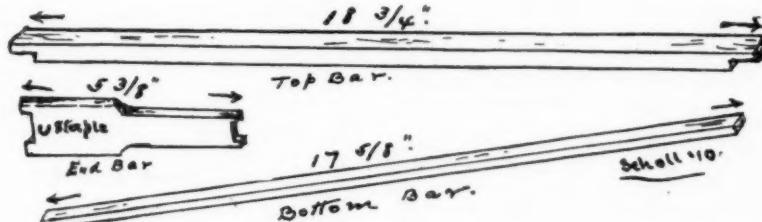
The top-bar is just a plain strip of wood cut off of $\frac{1}{8}$ -inch stuff, which is

it will be shown later. At each end, notches are cut out 3-16 deep by 15-16 inch long, leaving the ends 5-16 thick to hang on.

The end-bars are shallow Hoffman style, $5\frac{3}{8}$ inches long and $\frac{3}{8}$ -inch thick, which latter makes a much stouter and stronger frame than was formerly put on the market, with the end-bars only 5-16 thick. This, in addition to the top-bar we use, makes it a much better frame.

For the bottom-bar just plain strips $\frac{1}{4} \times \frac{1}{4} \times 17\frac{1}{8}$ inches are used. We have tried slightly heavier bottom-bars, but with such a shallow frame it is not necessary to use them.

We have tried extensively both the long top-bar frames without the end-spacing staples on the end-bars beneath the ends of the top-bars and those with the staples. We find that after the frames, and the supers in which they hang, have been in use for some time, there is no doubt about it that the staple-spaced frames are better, and can be manipulated more rapidly.



the width of the top-bar, and just $\frac{1}{2}$ inch thick. In other words, it is nothing but a $\frac{1}{2}$ -inch strip ripped off of a $\frac{3}{8}$ -inch board. This board, from which they are cut, is just exactly $18\frac{3}{4}$ inches long, all square and true, so that every strip will be exactly the same length, making every top-bar from it exactly $18\frac{3}{4}$ inches long. There is no groove on the underside for foundation, but only smooth and flat, and how to fasten

idly. We have thousands of each kind in use, and as long as the ends of the frames, top-bars and the hive-rabbits are clean, there is not much trouble. As soon as the bees stick propolis into these intersections, the trouble begins with the long top-bars, and then the staple-spaced frames can be handled much more easily. This is quite an item to consider in bulk-comb honey production when short cuts and rapid

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manipulations make us the more dollars and cents.

And, again, we want the best, strong frame possible for our purpose, for it differs from the production of extracted honey, in that since the combs are cut from these frames, the frames scraped clean and foundation put in each time they have been filled, they are handled much more, and therefore receive much more rough usage. Our frames are strong and easily manipulated.

The self-spacing idea is to be greatly preferred for our purpose, since all of our manipulations deal with whole supers of these frames, once they are filled with foundation, and the frames are not again handled until the finished product is to be cut out of them in the honey-house. We have tried many kinds, but the advantages of the self-spaced ever-ready-in-position frames beat them all; yea, not only that, but for our rapid, get-there, money-making work, unspaced frames are entirely out of the question for our purpose. Our system demands that when the frames are once ready for the hives, they be in the supers so that the whole thing can be "slapped" on to the hive in a second; the same when they come off in a wholesale manner when full. All this will be described in due time.

Returning to some of the advantages of our narrow, thick, top-bars, we cite their greater strength, no sagging, and hence no unevenness of the tops of the frames, allowing bur and brace comb building, which is a great nuisance in our rapid work; this extra strength at the same time making a stronger frame, allowing freer communication between the frames and from one story to another on account of the wider space between top-bars of one frame and the next, which is worth many hundreds of pounds of honey otherwise lost on account of the discouraging feature of the wide top-bar shallow frames; and making the examination of the contents of the frames much easier in that a glance between the top-bars of such frames reveals more than can be ascertained with wide top-bars and narrow spaces.

All of the above applies equally well, if not more so, to the brood-chambers if such shallow, narrow top-bar frames are used throughout, as we do in the hives we have described in a former article. By using these frames thus we have found them to be an ideal frame for all purposes, as well as for the production of fancy comb honey.

Light Honey Consumption this Winter— "Chunk" Honey

Bees have consumed less stores here this winter than usual. This is from two different causes, I think: the principal one being the steady cold we have had the present winter. The second one is, the bees were not as strong as they often are when we have a fall honey-flow. The past year was very dry, and we had no fall flow here.

Mr. Scholl, your articles on the production of "chunk" honey are very interesting reading, and show you have worked out a system pretty much your own, and that you have had much practical experience, both in the production and sale of such honey. I have worked my apiaries mostly for extracted honey, but am working my bees now more and more for "chunk" honey, for which I have a good demand. I hardly think the production of chunk honey will ever supersede section honey in the North as it

has here in the South. There are several reasons for thinking this, a few of which I will mention:

In the first place, it would seem the people of the North had become thoroughly educated to the use, or consumption, of section honey, which is not the case in many of the Southern States. Then, it is seldom we have a good honey-flow of long enough duration to produce a first-class section honey; while in most of the Northern States the honey-flows are fast and strong compared with ours, and it is much easier to produce nice section honey there than here. Then, from my knowledge of much of the Northern honey, it is very much inclined to granulate, more so than the honey we usually put up here for chunk honey; and I want to caution the would-be chunk-honey producer there, as well as here, to be very careful about putting up any honey as chunk honey that is quick to granulate. From what I know of alfalfa honey, it would not be at all suitable to put up in that way. Some chunk honey was shipped into this locality a few years ago that was all granulated on arrival, and caused much dissatisfaction among the consumers.

So my advice to those who live in a locality that has fast and good honey-flows, where section honey is easily produced, to try chunk honey only on a small scale. No, I don't believe chunk honey will ever become as much of a staple article in the North as it has become in the South. L. B. SMITH.
Rescue, Texas.

DEAR MR. SMITH:—You surmise rightly when you lay the main cause of light honey consumption of the past winter to the long continued and steady cold weather, but since our very strong, rousing colonies have shown the same thing in that respect, it seems that the weakness of the colonies did not have so much to do with it.

It is not my intention, as stated in a former article, to have bulk-comb honey take the place of the section

honey entirely, in the North, as it has done here, in which you are right to this extent. But, Mr. Smith, it is a mistake to state that we seldom have good honey-flows here in the South, yea, even in Texas, and you'll have a big wasp's-nest full of bee-keepers jumping up and down on you if you don't mind, for we have many ideal locations where the finest section honey can be produced, and where the honey-flows for quantity and rapidity of the flows cannot be surpassed anywhere. On the other hand, I know personally, also, that there are just as many places in the North where the honey-flows are not better than you have in your own locality; where it is a difficult matter to produce good section honey; and where bulk-comb honey would prove much more profitable for the producer, and more economical for the consumer, than section honey. It is these we are trying to reach, as well as a multitude who could make more money out of bulk-comb honey production than section honey, no matter what kind, or how good, honey-flows they may have.

We want the would-be bulk-comb-honey producers to go slow, to be sure, and such a warning has been given already; but it should be tried by the majority on a small scale, at least.

As much of our honey here granulates just as readily as anywhere else, and it is not such a serious obstacle, I shall leave this for a separate article in due time.

National Bee-Keepers' Association

General Manager. N. E. FRANCE, Platteville, Wis.

R. L. Taylor, Chairman of the Board of Directors, has been having the gripe.

The winter losses of bees are quite heavy in places. Some report 75 percent loss.

Each new member gets a copy of the 1909 Annual Report free, as long as the supply lasts, which is getting low.

The present honey prospects are good except in Southern California, where they have had no rains for 9 weeks.

The membership enrollment today (March 26) is 3700. The President's mark of 5000 is fast coming in sight. Let the good work go on.

Information Bulletin No. 15 has just been mailed to members. This is of value only as each member uses it. To many it is worth the dues of several years.

If each National member would work to get new members like our recent candidate for President (Thomas Chantry) has done, we would number 5000 by the close of the honey harvest. Why not do this?

The second edition of "Bee-Keepers' Legal Rights" has just been mailed to the membership. It is a reference volume, which every bee-keeper should have in his library. Paid up members

get a free copy. There are none for sale to outsiders.

If our members who produce extracted honey will follow the advice given in Information Bulletin No. 15, there will be a great demand for honey with hopes of better prices next fall. The bulletin contains the following on this subject:

GREAT DEMAND FOR HONEY.

"I have devoted much time to discover why so many complain of no market for their honey. I have asked 15 wholesale dealers why honey-sales were slow when other foods found ready sale at high prices. I also asked bee-keepers who buy tons of honey besides their own for bottling, and also asked many who used to be extensive honey-eaters, why they have dropped it from their daily food. Almost every one replies with this answer:

"Good, well-ripened honey, sealed by the bees, and matured in the hives, is always in demand at fair prices. But this thin stuff, extracted before it is ready—before it is well ripened—that will sour—that never has either flavor or body—that is what spoils the market for honey."

"Through the Information Bureau I have sent me many offers of honey to sell. For several such lots I found sales, and later received word from the purchasers that the thin honey had no body or flavor, except souring. If every member of the National Association will promise me that all his honey will be ripe, capped-over honey before it leaves the hives, he will have a market which he never can supply. Our Association never can brand the honey of its members until this is done."

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Contributed Articles

Bee-Keeping as a Business

BY F. GREINER.

A writer in Centralblatt has the following to say in regard to the reliability of bee-keeping now as compared to years ago:

"Some 250 years ago quite a few people discovered that bee-keeping was a better paying business than many other enterprises, but conditions have changed considerably since then. Every business, every enterprise, if carried on at all, has to return a larger dividend than formerly, or it is found to be neglected. Even ordinary agriculture, with its more intense culture and use of machinery, is prominent as a well-paying business. It pays much better than bee-keeping. It is therefore not astonishing that bee-keeping and honey-production have slightly been retrograding. It must be acknowledged that apiculture has not kept pace with other enterprises when considered from the dollar-and-cent standpoint."

Whether all the above can be endorsed and subscribed to by us here in America is questionable. Can it be said that the business here has come to a stand-still? Do we produce less honey? Does it not pay us well to keep bees?

It appears to me that the bee-keepers in the United States turn out a great deal more honey than formerly. I have been in the businesses 35 years. At the beginning of this period we found *no honey* in our common groceries. It is now offered in almost every little store in the country in both forms—comb-honey and extracted. Judging from this, it seems that the output is proportionately larger than it was 35 years ago, saying nothing of 250 years ago. It is to be regretted that no reliable data are at hand for comparison. We haven't anything tangible even as to the amount that we produce today. Uncle Sam will tell us, I suppose, after the next census, just how many colonies of bees we have or had in the United States on April 15, 1910; what their value is; how many pounds of honey was produced in 1909; how much wax; and the value of these products. It is gratifying to know that, sooner or later we will be in possession of these figures. As to former years, of course we are depending only on guesses.

Our methods have advanced over former practices, as may be said of agriculture and manufacture. Even with the poorer bee-pasturage the bee-keeper is enabled to produce more honey, by 3 or 4 times, than he could years ago—not per hive perhaps, but with the amount of labor he puts into the business; and the prospect, it seems to me, is in no way discouraging.

I am not sure that we have as many bee-keepers, proportionately, as formerly, but many more of them keep larger and more apiaries. The business has really become a business, while it was formerly carried on as a side-issue of minor importance. The honey produced was almost wholly consumed at home—none entered into commerce.

Personally, I have the greatest con-

fidence in the bee-business—more than I ever had. Considering the capital invested, and the labor required to conduct it, the returns from it are greater than from keeping poultry and growing fruit—at least it pays me better—and better than general farming does the average tiller of the soil.

Naples, N. Y.

Black or European Foul Brood

BY G. M. DOOLITTLE.

By turning to pages 644, and 648 of the American Bee Journal for the year 1884, a full and exhaustive treatise of foul brood may be found over the signature of Frank R. Cheshire, of London, England, who dug down into the matter more deeply than any, unless perchance, Drs. Phillips and White are excepted, ever found time to do. He there, and on pages 740 to 742 of the same volume, (more than 25 years ago,) calls this disease "bacillus alvei," and said so many things which were entirely foreign to our practical and lamented Moses Quinby of those days, that in absence of any reply from any of our (in those days) scientists, I ventured a reply on page 245 of the American Bee Journal for 1885. In this reply I said:

"These words of Mr. Cheshire, found on page 646, 'the popular idea that honey is the means by which it is carried from hive to hive, and that mainly through robbing, is as far in error that only occasionally and casually can honey convey it from colony to colony,' are so directly opposed to our much honored Quinby's words, 'I drew all the bees from such diseased colonies, strained the honey, and fed it to several young, healthy swarms soon after being hived. When examined a few weeks after, every one, without exception, had caught the contagion,' that it is not strange that I began to wonder if here was not a mistake somewhere.

"Again, Mr. D. A. Jones says, 'A single drop of honey taken from a diseased colony, is sufficient to start the work,' which, if arrested, is inevitable destruction." While I always prize scientific research highly, yet to be valuable to me, such research must not run squarely against facts known to exist from practical experience. As hundreds of the practical apiarists of the United States do know that the foul brood of this country is spreading, and contagious mainly through the honey, the words of Mr. Cheshire sound very strangely to me when applying them to what I know of foul brood."

I have quoted thus largely, so that those of the younger members of our American Bee Journal family who may not be able to turn to the pages referred to above, may get a fair understanding of the case. And yet, right on page 644, Mr. Cheshire gives a description of *black brood*, now known as foul brood, that is more perfect in conciseness than any description which has yet appeared, no matter whether the writer be from this or any other part of the world. If Mr. Frank R. Cheshire were alive today, I should feel it a great privilege to ask his pardon for what I wrote in 1885, and confess to him that I was that "pig-headed" that the words "foul brood" got so

near my eyes that I could not read "BLACK BROOD" in his description. And, right here I wish to say that by calling both of these diseases *foul brood*, it is exceedingly misleading at the present time, as many thus write and speak, without qualifying by using the words "American" or "European" before the kind meant. It would seem far preferable to have stuck to the old "black brood," for the European, even did it not "just suit the occasion," than to be mixed, as very many are when trying to express themselves in the matter. But to return.

The first I fully realized that Mr. Cheshire's "bacillus alvei" was our black brood, was at a bee-meeting 3 or 4 years ago, when Dr. Phillips told us that it had now come to light that the foul brood of Europe was not the foul brood of our American fathers, but what we had termed "black brood." Then the whole matter opened up to me, and I readily saw that when I was opposing Mr. Cheshire, for asserting that no bacillus or spores could be found in the honey of diseased colonies, he was right and I was wrong; the confusion coming about by *our* using the words *foul brood* as representing two almost, if not entirely, different diseases. I know that just ONE drop of American foul-broody honey going into a healthy colony will surely bring disease and death to that colony, as it is taken therein; and I am NOW as fully persuaded that all the honey in a score of European foul broody hives will not carry the disease to ONE single colony, no matter if all the colonies in a large apiary partake of it; as was Mr. Cheshire when he said bacillus alvei (the same being European foul brood) could not be conveyed by the honey.

Now let me come back to Dr. Miller's article, found on pages 394-5 of the American Bee Journal for December, 1909, of which I spoke in my article last month. Dr. Miller says, "The regular thing is to shake on foundation or starters in the evening — that, probably, because safer from starting robbing." Just so. And I have been asking, "What is the use of shaking at all, if, as proven by Mr. Cheshire, Mr. E. W. Alexander, Mr. J. A. Green, Dr. C.C. Miller and myself, and many others, that European foul brood is NOT INFECTIOUS through the honey?"

But one of our New York foul brood inspectors thinks it would be a dangerous thing to take the stand that the disease cannot be carried in the honey; and so this truth, as so fully brought out by Mr. Cheshire, has been kept hid from the public, to the vexatious toil, sweat and trouble of the hundreds and thousands of bee-keepers of the world, for fear some would become too lax in this matter, and thereby spread the disease.

Now, the disease is IN the honey, or it is NOT. Mr. Cheshire's pronunciation that it is NOT, has never been overthrown, not even by Doolittle (in his ignorance), and until it has been overthrown by positive proof, it seems wicked to keep the apiarists of the world laboring on that which amounts to nothing.

Dr. Miller tells us how some of the colonies which he shook deserted be-

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cause he "starved" them too close, and to overcome this desertion he gave them sections of honey from *DISEASED* colonies (italics mine), then he left them a comb of honey from their *OWN* diseased hive; and finally he took to the Alexander plan, and left them all their diseased honey, but kept them queenless for a certain length of time, when all went well, and the disease disappeared in all alike. And that Doo-little man, has been sitting right down and hiding his "light under a bushel," because a few have said that it is not best that the truth be known; which light, if it had been let shine, would have saved the good Doctor all of his trouble of "shaking like sixty" during his weariness each *EVENING*, for fear robber-bees would get the honey, if he did it while he was rested in the morning.

Now about how colonies become diseased: As I have lent Mr. Simmins' book, so I do not have access to it, I must quote from memory. If I am correct, both he, and my old teacher in apiculture, J. Burtis, claim that *bacillus alvei*, like many of the germ diseases of the human family, are always 'floating in the air,' and when conditions are right, they take possession, and the patient becomes sick, or dies from the disease, which they cause."

One thing has been very noticeable: When we have what we term "a poor year for bees," the disease has been at its worst; as soon as it changes to a good time for bees, those colonies having the disease, but still strong in numbers, begin to pick up, clean out the dead brood, and by the close of the white honey harvest, the disease has mostly, if not entirely disappeared; while a really good year, from beginning to end, the whole apiary presents the usual appearance that it does when no European foul brood disease is present. But, with the old American foul brood, there is no let up. It is always aggressive, and, as Dr. Miller well says, "the Alexander plan" (nor any other, short of ridding a colony of all the foul broody honey,) will not cure it.

Mr. Cheshire tells us on those pages away back in the American Bee Journal for 1884, that phenol or pure carbolic acid, *will cure* black brood (*bacillus alvei*). I have never tried it. If any have, they will benefit the readers of the American Bee Journal by telling us about the matter. I am well aware that carbolic acid has been tried on American foul brood (*bacillus larvæ*) and failed; but has it been tried with European foul brood (*bacillus alvei*) in the United States?

Borodino, N. Y.

Methods of Treatment of European Foul Brood Compared

BY DR. C. C. MILLER.

In treating European foul brood by the Alexander plan—and it should be kept in mind that only European and not American foul brood can be cured by that plan—a virgin queen is given 20 days after the removal of the old queen. If the cure is just as certain by giving

the virgin 10 days sooner, the shorter period is better. Even if there are some failures by the shorter plan, provided there be not too many, it will still be better to use the short cut if the gain in the successful cases be enough to overbalance the loss in the cases of failure. So it may be worth while to attempt some comparison between the two ways, so as to form at least a little estimate as to the gain.

Suppose we have on the 31st day of May 2 colonies affected by European foul brood, the two colonies being exactly alike in every particular. Suppose each queen for the past six weeks has been laying at such a rate that the output of healthy bees amounts to 1000 daily. (As a matter of fact that sort of regular work does not take place, but it makes the problem easier, and for the sake of illustration it may serve just as well.)

An important part of the treatment is to have the colonies strong, or rather to make them so, for a colony affected by foul brood is not likely to be strong; so on the 31st day of May we will give to each colony enough brood in all stages so that 1000 young bees will hatch out of it daily in each colony. At the same time we will remove the queens. Counting 42 days as the life of a bee, there will be in each hive 42,000 bees. As there will be 1,000 bees dying daily, and 1,000 daily increase from the brood of the removed queen, and also another 1,000 from the added brood, there will be a net increase of 1,000 bees. So June 1 there will be 43,000 in each hive, and 63,000 June 21. On that date the last of the brood will have hatched out, so there will be no more increase. But the daily death-rate will continue, so there will be a loss of 1,000 daily, after June 21.

So far we have the same figures for each colony. Now let us see about the difference in treatment. One colony, which we will call A, is to have the regular Alexander treatment, queen-cells being destroyed June 9, and a virgin given June 20. The other, which we will call M, is to have the modified treatment, queen-cells being destroyed June 10 and a virgin given at the same time.

In each case the virgin is supposed to be just hatched. As each will begin laying when about 10 days old, the one in A will begin laying June 30, and the first young bee from her eggs will hatch out 21 days later, or July 21. Let us see how many bees there are in A on this latter date.

We found there were 63,000 bees June 21, and a daily loss of 1,000 bees after that. From June 21 to July 21 is 30 days, during which time the total loss will be 30,000. Take 30,000 from 63,000, and we have left 33,000 as the number of bees in A, July 21.

In M there will be the same figures except for the difference made by giving the virgin on a different date. She was given June 10, and may be expected to begin laying June 20. The daily output of eggs depends on the strength of the colony, and more especially on the number of the nurse-bees, or bees not more than 16 days old. As 2,000 young bees have been hatched out daily in the past

16 days, the nurse-bees will number 16 times 2,000 or 32,000. That is just twice as many as there were in the hive during the reign of the old queen, for as 1,000 young bees were hatched out daily there would be 16 times that number, or 16,000 nurse-bees. With twice the nurse-bees, the queen ought to lay twice as many eggs, so long as the number does not go beyond her capacity. With 16,000 nurse-bees the queen laid 1,000 eggs daily for the 1,000 bees that hatched out, and an additional number of eggs for the brood that died. But let us call it 1,000, to be on the safe side. Then the young queen in M, with double the number of nurse-bees, would lay 2,000 eggs daily. The first of these eggs being laid June 20, the first young bees would hatch out 21 days later, or July 11. July 21, or 10 days later, 10 times 2,000, or 20,000 would be the number of young bees from the new queen in M.

So we have 20,000 more bees in M than in A July 21. That is, there are 33,000 bees in A, and 53,000 in M. Just what difference that would make in surplus would depend on the season. In some seasons it would mean empty supers for A, and a fair yield from M. At any rate it would pay for a large percentage of failures by the shorter plan. My present opinion is that there will be no more failures than by the longer plan.

Marengo, Ill.

No. 2--Making Honey-Vinegar

BY C. P. DADANT.

While the alcoholic fermentation is going on, it is necessary to keep the liquid at a fairly high temperature. Should you let it fall below 70 degrees, it might be difficult to start it again. But the liquid in fermenting will create a certain amount of heat which will help its work. Within a week, if all goes well, the change is such that there is next to no saccharine matter left. If the air has been excluded, the acetic fermentation has probably also begun, and you may readily detect it by the smell. If, however, this should fail to be produced, add a little good vinegar, or what is called "vinegar-mother," taken from the old vinegar barrel. Let it be free from musty smell, or you might perpetuate this smell. Keep the barrel in a warm place in the shade, if possible, while this is going on. Many persons keep their vinegar barrel out-of-doors in the sun. I do not like this because it warps the upper staves and spoils the barrel in short order. Besides, it evaporates too much of the liquid.

After the acetic fermentation has begun, all it needs is plenty of air and sufficient warmth. Practical vinegar-makers succeed in making good vinegar in 48 hours after the alcoholic fermentation, by letting it drip slowly in a warm atmosphere through a barrel containing oak or beech shavings, which have been previously dipped into good vinegar. The barrel is bored at both ends, and the liquid that has gone through the alcoholic fermentation goes in sweet at the top and comes out sour at the bottom. But you could not succeed in doing this with unfermented honey-water.

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When either fermentation is incomplete, the result will be a vinegar, sweet, alcoholic and sour at the same time. Such vinegar might do for sweet pickles, but not for ordinary sale.

If you follow the simple process mentioned above, without the extra work of passing it through shavings, you may make good vinegar in 2 or 3 weeks. Much depends upon the completion of the first fermentation. After that, the acetic change will push itself forward without interruption, unless you let the temperature fall, or exclude the air.

Transferring the vinegar, or what is ordinarily called "racking," in other words, taking it from the dregs, will increase its strength because it helps to oxidize it. The oftener this is done the clearer it will be, and the stronger it will become.

The vinegar should be fully matured before winter, even if you wait till the grapes are ripe to make it. To keep it during winter, put it in a warm room. The cellar will do. If you have a furnace, a corner in the furnace-room is quite satisfactory, even with the feature of a little coal-dust, which would settle at the bottom. But if the vinegar is sufficiently strong it may be bunged and put away anywhere. If you have a barrel of strong vinegar and one of unfinished vinegar, add a little from the latter barrel to the former every time you draw some for your use. In this way you will keep it active, and the weak vinegar will gain strength.

To draw vinegar from the barrel, as faucets are apt to leak and get out of order, we use a small hose about 6 feet long and a half inch in diameter, and draw the vinegar by siphon. This hose is used for no other purpose, for it would give the vinegar-germs to other liquids. We keep it hung right by the barrel. But before you attempt to use such a device, be sure that you have tried it with clear water first, and that you fully understand the principle of the siphon, otherwise you would risk taking an unpleasant drink of vinegar partly in your windpipe, and I should want to be out of your way then. After a little practice one may draw a liquid from a barrel with a siphon without even tasting it.

Housekeepers should be warned against keeping open vinegar vessels in apartments or cellars where open jars or bottles of preserves, or marmalades, or cider, or claret, or even grape-juice, are kept. The germs of vinegar will pervade the air and act upon anything which may have a tendency to sour.

A damp cellar will in no way injure vinegar. A very dry cellar will cause it to evaporate. In that case water may be added. Our make of vinegar by the above process is so strong that our women use about half water in making pickles. But be sure not to allow any musty or moldy action. When the vinegar is thoroughly made, do not leave the barrel open unnecessarily. It needs no air then, and will only gather impurities.

Do not expect your vinegar to improve with old age. After 3 or 4 years in this hot and cold climate, vinegars and wines have nothing to gain from age. It is only in the deep cellars of

mildly temperate Europe that great age has good effect on wines or vinegar, and I doubt whether the latter is improved by great age in any climate.

When the vinegar has attained its highest point of excellence, you may best keep it by bottling it. Very few, however, go to that trouble, owing to the low value of even the best vinegar. Its deterioration is evidenced by the forming of the vinegar-mother, which is nevertheless a very good adjunct to use in new vinegar when the acetic action is slow. But some authorities object to it under the plea that it hastens the deterioration of the fresh article. A still better agent to hasten the fermentation from alcohol to vinegar is what is called the "flowers of vinegar," a fungus which is the base, the real cause of acetic fermentation. These flowers appear on the surface of all good vinegar in small white particles resembling mold, and are scientifically named "mycoderma aceti." Not only do they form in the making of vinegar, but they will often appear on ciders and wines previous to acetification. In those cases, the only prevention of vinegar fermentation of those beverages is by heating and sealing afterwards.

Another so-called disease of vinegar is the vinegar-eel—*anguillula aceti*—a very small helminth, visible, however, to the naked eye, if you place the vinegar in a very thin flat vial, and hold it between your eye and the light. This is never found in artificial vinegars made of injurious acids. So the vinegar which contains them may very positively be considered as pure, honest goods. They are very easily destroyed by heating to about 140 degrees, Fahr. They will then settle to the bottom of the vessel and may be taken off with the dregs.

If you want very clear vinegar, you may clarify it, after heating, by using the white of eggs. For a barrel of vinegar it would take a half-dozen. Pour them into the barrel and stir vigorously with a stick or a wooden spatula. The white of eggs well mixed with the liquid makes a sort of network which in settling takes with it all the floating impurities. Drawing the liquid off carefully, without stirring, after 4 or 5 days will secure a very limpid article. But this trouble should be taken only with thoroughly finished vinegar.

Cider or wine vinegar may be treated in exactly the same way as honey. Good cider and honey-water mixed make excellent vinegar if air exposure and temperature are right. In general, those who fail to make good vinegar have been at fault in providing insufficient heat or warmth at the inception. Summer or fall is the proper time. Late fall or winter is a poor time to make good vinegar.

Do not forget that you need never lose any honey from cappings, or from the washing of honey-soaked utensils. The first water used need not be of great amount. Water from cappings washing will look very dirty. Just heat it and get it to ferment, and after the fermentation is stopped you will find that all impurities have settled to the bottom. As those impurities are entirely composed of particles that you would eat without second thought,

when sealed comb honey is served upon the table, I cannot see why you should object to them in your vinegar, especially if they are left in the dregs when the liquid is racked. Many a bee-keeper wastes a lot of good honey by failing to wash the cappings before rendering them into wax. We usually let them drain for several weeks previous to rendering them, but there is always enough sweet left in them to make a quantity of first-class vinegar, which is all net profit to the apiarist. Economy is the mother of thrift.

I have often received beeswax (shipped to me by good apiarists) that fairly leaked honey, even after it had been rendered and boxed for shipment. This is an unnecessary waste. We never allow a drop of good honey to be wasted.

Hamilton, Ill.

Plague of Ignorance—Hornets

BY ALLEN LATHAM.

The title of this article is chosen because of the title found on page 371 of the American Bee Journal for 1909. Ignorance is a plague which affects us all from earliest childhood, and one in which none of us ever becomes better than convalescent. Therefore, W. A. Pryal is very human in his ignorance, though he may not be wholly human in his method of vindicating his ignorance in his destruction of the hornets.

Possibly hornets in California are of a different breed from what they are in Connecticut, and their destruction there may be justifiable. I feel rather confident, however, that their habits there are much the same as they are here; and it is likely that the country over, these insects, though usually considered a pest, are among man's best friends. Last summer a farmer told with great glee about getting into a yellow-jackets' nest while haying. The gleeful part was that in which he "stomped it into the ground." Possibly some of my readers wear the same astonishment on their faces now that he wore when I told him that he had killed one of his best friends.

It was 25 years ago that I first learned of the habits of the yellow-jacket. I had taken up a war against the tomato worm, and being then a boy I hanged 14 fat fellows on the rail fence with bits of twine. The next day disclosed the fact that all the worms were not all there. Pausing to note the fact I observed a yellow-jacket cutting off a piece of tomato-worm steak to carry home to the children. Within 3 days only the heads of the culprits remained on the gallows. The lesson was instructive. It set me to thinking and to watching. I learned little by little that these striped pests (the yellow-jackets) made a regular diet upon the larvae of moths and butterflies. I gradually came to know what these hornets were searching for when I saw them poking about the foliage of a tree or bush. It is a common sight for one who looks for it to see a yellow-jacket flying along with a caterpillar hanging from its jaws. And the busy chaps that are steadily returning to their beautiful nest are carrying the chewed remains of one of our enemies.

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There is not the slightest doubt in my own mind that insect pests would be beyond our control but for the hornets. It is a sad fact that their worth is little known, and, when it is learned, is not much more than half believed. It does seem that a bee-keeper should not feel so strongly against the sting of a hornet that he thereafter counts that insect his mortal enemy. I almost have to laugh at the attitude which Mr. Pryal has taken, for it is almost identically the attitude the public takes on the subject of honey-bees—and Mr. Pryal is a bee-keeper. But if Mr. Pryal continues to set his trap for hornets he deserves to be put out of the brotherhood.

The hornets—and by that term I mean both yellow and black—are carnivorous insects, rarely paying much attention to honey. Still, the yellow-jacket shows its kinship to the bee by filling up with honey when the caterpillar season is slow. The queen hornets, too, not infrequently try to get at the honey of the hive in early spring. The main food supply, however, is meat. They are insect scavengers and tigers. They accept living or dead insects. A single nest with its hundreds must destroy unnumbered larvæ of many kinds. It takes by preference the naked larvæ, such as the cabbage-worm, the larvæ of the Cecropia, Polyphemus, and other large moths, and the cankerworm, etc. These are taken while small, and car-

ried off bodily. This hornet will carry off the larvæ of the Imperial moth—a beautiful moth, but most destructive as are all the moths in their larval stages. I have known an adult larva of this moth to consume 19 leaves of the European linden in the space of one night, by actual count. This larva grows to be the size of a man's finger. A single moth lays over 200 eggs. Suppose the caterpillars were not taken care of, what then? How much has Massachusetts spent in trying to keep in check the gypsy moth? Probably over one million dollars—and the end is not yet. The gypsy moth comes from a foreign shore, and has no natural enemies here, hence it multiplies as moths can multiply. Our own native moths are kept in check by natural means.

Let every bee-keeper spread the truth in regard to hornets of all kinds. *They are our friends.* Let them alone and they will let you alone. Many an hour have I spent with my face in close proximity to their nests, studying their habits. They resent any molestation of their nests. Who would not? They sometimes resent sudden motions near their nests. Long experience has taught them that sudden motions are frequently followed by nest destruction. They never resent gentle motions, and pay no more attention to a man than to a tree, if the man knows his business.

Deliver us from the plague of ignorance.
Norwich, Conn.

honey put up in such a way that the public could sample the same.

VARIOUS PAPERS AND DISCUSSIONS.

Among the addresses given were "The Bee-Keepers' Real Problem," by the Secretary; President's Address by L. A. Aspinwall; "Science and Theory of Bee-Keeping," by Hon. Geo. E. Hilton; and "Some of My Experiences as a Farmer Bee-Keeper," by W. J. Manley. These all brought discussions along their various lines.

MICHIGAN MEMBERS' BOOKLET.

It was decided to continue the publication of the booklet which gives the names and addresses of the members in good standing having honey for sale. This year it is to be gotten out about Aug. 1st, and there is to be 1500 printed. This booklet has been a big help to the members in selling their honey. Last year it was sent all over the United States, and the great cry at the convention was that the members could not supply the demand for honey. One bee-keeper who produces probably at least 10,000 pounds of honey annually, stated that he could sell ten times that amount, and gives the entire credit to the booklet.

NEXT CONVENTION—SELLING HONEY.

The next convention is to be held in the fall, in Grand Rapids. The Association now has nearly 200 members, and a strong effort is to be made to increase this number greatly by the next convention. This Association is carrying out a practical plan of co-operative selling with no expense to the members other than their annual dues.

The old officers were elected to succeed themselves, and are as follows: President, L. A. Aspinwall, of Jackson; Vice-President, E. D. Townsend, of Remus; Secretary-Treasurer, E. B. Tyrrell, of Detroit.

Hon. Geo. E. Hilton was elected to represent the Association at the State Legislature on foul brood legislation.

The Executive Board was authorized to appoint a representative to attend the next National meeting.

The books of the Secretary were also audited by an Auditing Committee, and the following report made: Total receipts, \$200.41; total expenditures, \$158.80. Balance on hand, \$41.61.

AWARDS ON EXHIBITS.

Prizes were won as follows: Best 10 pounds of comb honey—1st, C. S. Foote, of Ridgeway; 2d, L. C. Wheeler, of Barryton. Best 10 pounds of extracted—1st, A. D. D. Wood, of Lansing; 2d, L. C. Wheeler. Three pounds of extracted containing least water—1st, L. C. Wheeler; 2d, A. D. D. Wood. Best 10 pounds of beeswax—1st, A. D. D. Wood; 2d, J. H. Peters, of Detroit; 3d, L. C. Wheeler. E. B. TYRRELL, Sec.

Worth the Money.

With reference to the advance from 75 cents to \$1 a year for the American Bee Journal, I think, considering what we get, no subscriber should raise any objection. I consider "Dr. Miller's Question-Box" alone is worth the money, to say nothing of the Journal as a whole.

WALTER NEWELL.

Convention Proceedings

Report of the Michigan Convention

The Michigan Bee-Keepers' convention was held Feb. 23 and 24, 1910, at Lansing, and was pronounced by all present to be one of the liveliest the Association ever held. Not a dead minute during the two days' session. President Aspinwall kept things moving every minute.

AFFILIATION WITH THE NATIONAL.

The convention started out with the Secretary's report, which brought out some good, live discussions right from the start. The question of continuing in affiliation with the National was discussed, with arguments put up both for and against it. It was finally decided to remain as before; but as it was deemed advisable that the Association should have a larger working capital, the dues of the Michigan were placed at one dollar per year, with an extra half dollar to go to the National, or \$1.50 for the two. Of course, a person already holding membership in the National could become a member of the Michigan by paying the dollar. It was also voted that the membership of each should expire on Jan. 1st of each year. This brings the renewals all at one time.

WIRING FRAMES—MAKING COMB FOUNDATION.

The question of wiring frames to prevent sagging came up as a result of

the paper sent by Manager N. E. France, of the National, and caused a lively discussion. The concensus of opinion, however, seemed to be that no matter how your wired, the foundation would sag as long as it is made as at present. The following resolution was the result of this discussion:

"Be it resolved by the Michigan Bee-Keepers in convention assembled, that the manufacturers of comb foundation be asked to consider the question of making brood foundation so it will hang just opposite to the way it is made now, the object being to prevent sagging."

FOUL BROOD.

Ira D. Bartlett, of East Jordan, was also on the program for a paper on "Foul Brood," but owing to sickness in the family, was unable to be present. His paper was read, however, by the Secretary, and created much favorable discussion.

HONEY—ITS USE AND ADVERTISING.

The convention was favored by the presence of Pres. George W. York, of the National, also L. W. Boyden, of the A. I. Root Co. Mr. York read a paper on "Honey, Its Marketing and Staple Use," and Mr. Boyden contributed some valuable suggestions to the discussion on the advertising of honey. Among other things he suggested that the use of honey be demonstrated at pure food shows; also suggested having samples of the different flavors of



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Dr. Miller's Question-Box

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Black Honey-Dew.

1. What is black honey-dew?
A HOOSIER.

ANSWER.—Honey-dew is that which is gathered by the bees from the secretions of aphids, or plant-lice, and varies in color. Some of it is very dark, as dark as buckwheat honey, or darker, and this is probably what is meant by "black honey-dew."

How to Know Drone-Comb.

In reading the American Bee Journal, I see drone-comb spoken of a great deal. Please explain how I may be able to know drone-comb.
UTAH.

ANSWER.—Lay a rule on the surface of the comb. If the cells measure 5 to the inch they are worker-cells. If they measure 4 to the inch, they are drone-cells.

If you buy a text-book on bee-keeping, it will be worth to you many times its cost.

Colony Mostly Drones—Extracting Early Honey.

1. We have 15 colonies, and store them in a building. Why is it that some colonies are all drones? We had a colony last season that when we opened the hive had all drone-brood, so we cut it out, and it seems it was due to the queen. They had very few workers, so all the honey the bees would gather they would consume. We have both Banat and Italians. The Banat is a very good bee. We have all our queens clipped.

2. Is it advisable to extract early honey as soon as it is gathered? Is there any danger of it getting sour?
IOWA.

ANSWER.—1. Either, as you suggest, the colony has a drone-laying queen, or else it is queenless and has laying workers.

2. It may be extracted early if it is sealed; but neither early nor late honey should be extracted before sealing. It may sour, and the flavor may be poor.

Foul Brood and Stray Swarms—Spring Management.

1. Is it dangerous to take in tramp swarms of bees, that is, swarms we find hanging on the fence or trees in summer, apparently without an owner? Is there danger of foul brood?

2. How will it do to put on the strong colonies in spring a super of drawn-combs for the queen to use for brood, then supers above that for surplus? or would it be better, when she gets that super full of brood, to put her below, and put a queen-excluding honey-board between that super and the main brood-nest? Would I get stronger colonies?
IOWA.

ANSWERS.—1. A colony of bees in a tree may have foul brood as well as one in a hive. So may a swarm found hanging on a fence or a tree, but there is not so much danger in this case, for a colony badly affected with foul brood is not so very likely to swarm.

2. Very likely the plan is all right, but you do not give the size of hive, nor say whether comb honey or extracted is meant, and something depends on this.

Wax-Worms—Ripening Honey on the Hive.

1. I have been troubled with what, I think, you would call wax-worms. They are very, very small, probably $\frac{1}{4}$ -inch long. They bore into the sections, and bring out small batches of borings, which resemble fine sawdust. They are very difficult to see. I have also seen where they were in my brood-combs. I have searched Root's "A B C and X Y Z of Bee Culture," and all the bee-literature I can get, but can't find anything more than merely a mention of them. Can you suggest a remedy?

2. How long is it necessary to let honey (section or extracted) remain on the hive to be properly ripened? I have been keeping bees in a small way for several years. At

present, I have only 6 colonies, but I expect to increase to about 30 this year, by purchasing some early swarms.
MISSOURI.

ANSWER.—1. You have nothing but the common wax-worms, which you will find treated in the books under the head of bee-moth. Only they do not treat very fully of the very young larvae that you speak of, with their fine sawdust, which is perhaps more like flour than sawdust. It is simply the gnawings of the little pest, dark in old combs and white in white sections. Fumigate your sections lightly with sulphur, or perhaps better still with carbon disulphide—bisulphide of carbon has usually been called. The preventive measure is Italian blood.

2. Generally it may be taken when sealed, although the honey is better to be left on the hive some time after being sealed. But whiteness of comb requires that sections be taken off before darkening of the comb begins, so the rule is that the sooner sections are taken off after being sealed the better. But I have known it to be the case when honey was coming in with a rush that sections were so quickly sealed that the honey would easily become watery after being taken off the hives, unless very carefully kept.

Rearing Brood in Winter—Other Questions.

1. Why do bees rear brood in December and January? They had very little honey.

2. I ordered 6 untested queens, and lost 3 of them, and the other 3 are hybrids. Do you advise buying tested queens?

3. Last summer I took a queen out of a strong colony, and put her into a cage, and put her in the shade for about 5 minutes; when I looked at her she was dead. What killed her? The day was very warm.

4. How many pounds of honey ought bees to have at this time—March?
WEST VIRGINIA.

ANSWERS.—1. It is nothing unusual for bees wintered outdoors to begin rearing brood in February, especially as far south as Virginia, and not so very unusual in January. I think December is unusual, and I don't know why any of yours should begin so early. Possibly there is some difference in the bees themselves, and possibly something in their conditions.

2. Depends on circumstances. Usually I should advise buying untested. I think your experience was unusual. That the half that lived would prove hybrids looks a little as if the whole might be hybrids, and probably you would do well to order elsewhere next time.

3. I don't know. In the shade she would have lived all day, unless she starved. The only thing I can guess is that she may have been injured when caught.

4. Hard to say in exact figures. At a guess, I should say there might be danger of shortage with 10 pounds, and twice that would do no hurt.

Making Increase—Italianizing.

1. Is it safe to make increase by taking 4 frames of brood from a strong colony with the bees, place them about one hundred feet from the old stand, give them a good queen, feed them until bees are gathering honey and pollen, then add full sheets of foundation from time to time, as much as the bees can cover? About how long will it take till they will have from 7 to 8 frames of brood, under ordinary circumstances?

2. I have 2 colonies of 3-banded Italians. I intend to run one for extracted honey for my own use, and would like to increase the other to 5. Do you consider it safe to do so on the above-mentioned plan? I am going to buy my queens. I am a beginner, have 4 colonies, but have 2 of them with my father on the farm; those 2 are hybrids. I intend requeening them, and get the 3-banded Italians.
ILLINOIS.

ANSWER.—The plan is safe, unless you should operate at a time when no honey is coming in, as in that case there might be danger of robbing. They might build up in about a month.

2. Safe enough; but can you do it? That is, can you get from one colony so many frames of brood with adhering bees as many as 4 times in one season? Hardly, unless in an extra season.

Italianizing Bees.

1. I have only black bees in Danzenbaker hives, except 2 in box-hives. How would it work to put an Italian queen on the top of the frames in a new hive filled with full sheets of foundation—place it on the old stand and move the old hive to a new stand—what would be the best time of day to move the old hive, and if moved at night, would not most of the bees return to the new hive on the old stand?

2. In case of box-hives what would be the result if I should place them on top of new hives with full sheets of foundation, and the queen in a cage on top of the frames, with an escape-board between the hives so the bees could pass down in the new hive; leave them 24 hours and then remove the box-hive to a new stand—would the queens be released and accepted in these cases if it is done in spring when they are strong and nearly ready to swarm?

3. After moving the hives in the first question, suppose I should open the old hive, kill the black queen and put a queen in the cage on top of the frames, would not the young bees release and accept her? and wouldn't she take care of any queen-cells in the hive weakened by taking away practically all of the worker force?

ANSWER.—If you make the move at night, you might find an empty hive with no queen the next morning. The field-bees will return to the old stand, no matter what time of day or night you make the move. The thing is to have them stay there. It should be at a time when a large number are returning from the fields, so that both bees and queen will feel encouraged to remain. The best time is when the most bees are afield, and when the young bees are in the midst of a play-spell. I tried it once successfully with empty combs; I would hardly expect it to do so well with foundation. A frame of brood would make it all right, and for safety the queen should be caged.

2. Yes; of course understanding that the cages are provisioned so that the bees will eat out the candy and release the queen.

3. Yes.

Management to Prevent Swarming.

1. There is nothing I am more anxious about than the swarming problem, as I have nearly 300 colonies. I have just read about shaving off the heads of all capped brood to stop swarming. I think this may stop it, but I do not like the way, as there is a loss in some cases. I would like to try the plan, or a modification of the plan, I tried last summer, and would like suggestions from you. My bees were run for extracted honey at one yard, and were in 2-story, 10-frame hives. When they were quite well filled with brood and honey, and a good many had queen-cells under way, I placed a hive of empty combs under the 2-story hive on the bottom-board; into this hive of empty combs I put one frame of brood and the queen, and confined her there for the rest of the season. The two upper stories contained the brood, all but the one frame, and the lower story had enough empty combs to keep her busy for some time. Up to this time the entrance was at the bottom-board; I now changed it, by making an entrance at the top of the lower hive and over the queen-excluder, which covered the lower hive. This entrance was made by raising up the front of the second story, and putting in a block. The lower entrance was now closed. The bees in the lower story with the queen had to pass through the excluder in going and coming from the field. As the brood hatched from the two upper stories, the combs were filled with honey, and there was no excluder to bother the upper bees.

Now, I will tell how the plan worked. The bees swarmed well, and made a good crop of honey; a 70 percent increase, and about 25 percent of this came from the mating of young queens above the excluder, making two colonies on one stand. How could you have managed differently, so there would have been no swarming? Would breaking off the queen-cells from brood-combs above the excluder have done it, or all but one cell?

2. Would both queens try to fly out from the same stand, one above the excluder and the other below, in case of swarming?

3. By keeping all queen-cells broken off, after putting the brood above the excluder,

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and have the queen confined to the lower story under the excluder, what percent would try to swarm?

NEW YORK.

ANSWERS.—1. Pretty surely, if no cells above the excluder had been allowed.

2. I think so.

3. I don't know. Possibly not one.

You have used a variation of the Demaree plan. Here is the plan: Put all the brood in the second story over the excluder, leaving the queen below with empty combs or foundation, destroy all queen-cells at the time of putting up the brood, and also 10 days later. With some this proves an entire preventive of swarming, while others say there are some failures. Whether putting the one brood-comb below would make any difference I do not know. Neither do I know what difference was made by your change of entrance. I should be afraid that when you wedge up the second story the larger space would be filled with bur-combs.

Caging Queen Over a Colony—Other Questions.

1. When a queen is taken from a colony, and caged over another, what kind of a cage do you use?

2. Do you put candy in the cage?

3. Can she be returned to her own colony without introducing?

4. How long after a swarm issues can it and the original colony be united without fighting?

5. When part of a colony is drummed out, can the balance be united with them 21 days later without fighting?

6. I have directions for uniting bees after the honey-flow, by uniting the brood in August and September; this leaves a queen and a lot of old bees to dispose of. What would you do with them?

7. I use 8-frame hives on account of their light-weight, for extracting honey. Does one story give enough room for brood, or would an extracting super on top be better?

TENNESSEE.

ANSWER.—The cage that is listed in the catalogs as Miller's queen-catcher and introducing cage, although I vary the construction. But almost any cage will do.

2. Sure.

3. Yes, if she has not been away more than a day or two; but sometimes she may have acquired a strange scent that the bees do not like.

4. I don't know. It depends somewhat on circumstances. I should guess that there might be trouble sometimes in a week, and sometimes none in a month. But in the latter case it would be when honey is coming in well, and when almost anything would unite peaceably. But mind you, I don't know.

5. Generally, yes.

6. I can hardly understand how such a course would be advised unless it were intended to kill the old queen and old bees.

7. For a good strain of bees 8 frames are not enough for the building up, although they may be enough after the harvest begins. But even then more room might be better for extracted honey.

Making Increase—Shade-Boards — 8 or 10 Frame Hive—Feeding Honey-Dew.

1. I have 8 colonies of bees, and would like to increase to about 16. I have all Italian queens, and do not care to select any particular queen to rear the young queen for the increase, as I have no time to watch for natural swarms, and would like to try a way of making artificial increase. The following is my plan—let me know what you think about it:

I am going to get my colonies as strong as possible before the honey-flow, and when the swarming season comes I will look through them every few days, and if I find any building queen-cells, and preparing to swarm, I will take a new hive with frames filled with full sheets of foundation, and go to the colony which is getting ready to swarm, and lift out one frame with eggs and young larvae and the queen, hang it in the new hive, then remove the parent colony, and place this new hive with frame of eggs, larvae and queen on the old stand, and then brush about $\frac{1}{4}$ of the bees remaining in the parent colony, and place this new hive with frame of eggs, larvae and queen on the old stand, and then brush about $\frac{1}{4}$ of the bees remaining in the parent colony in front of the new hive, then move the parent colony in front of the new hive, then move the parent colony to a new

location and destroy all the queen-cells except the two best ones. Would this plan work?

2. Do you keep shade-boards on your hives during the hot season, or do you let them stand in the open sun?

3. What is the color of a drone from a leather-colored Italian queen? I bought a red clover queen from a breeder in Kentucky and her drones are almost jet black. Was she a full-blooded queen?

4. I adopted the 8-frame hive when I commenced with bees, but I think I made a mistake by not taking the 10-frame. I need some more hives. Would you advise me to take the 10-frame, or would it be better to stick to the 8-frame exclusively?

5. I have some honey which I would like to feed my bees in the spring; mix it with water, half and half, and give each colony $\frac{1}{2}$ pint at sundown every day in an Alexander feeder. Would this cause the bees to start robbing?

ILLINOIS.

ANSWERS.—1. Your plan will work if the queen-cells are sealed. Indeed, you would hardly need to destroy any cells, for the colony will be so much weakened by having $\frac{1}{4}$ of its bees taken away that it will hardly think of swarming. Besides, if you leave 2 cells you will be about as sure of swarming as if you leave a dozen. If the queen-cells are unsealed, they may not be well enough fed to make good queens in so weak a colony.

2. Sometimes I have used shade-boards, but mostly my hives have the shade of trees, not so much for the bees as for my own comfort when working at them.

3. Pure Italian drones vary very much, from being mostly yellow to very dark. If the workers of the yellow-colored Italian show the 3 bands, you may call the drones pure, no matter what color.

4. So long as the same frames are used in either, it would not cost you much to try the 10-frame hives side by side with the 8-frame, and then you could tell better than any one else which suits best. All this if you run for comb honey. If you run for extracted honey, I would advise you to change to 10-frame hives without any experimenting.

5. No, if you keep all well covered so that bees from outside can not get at the feed next morning.

Transferring—Spring Feeding—Old Comb Foundation—Jumbled Combs.

I have kept a few bees for 3 years, and am now starting with 70 colonies. I will devote all my time to the bees. I am using 8-frame hives, and running for comb honey. I have bought 10 box-hives, and want to transfer the bees to frame hives. When should I transfer?

2. Should I transfer from odd-sized hives to standard?

3. I am now feeding $\frac{1}{4}$ pint of thin sugar syrup once a day to each colony, in Alexander feeders. Am I doing right?

4. When should I put in new queens, and which are the best, Southern or Northern bred queens?

5. I have about 40 pounds of light foundation, 2 years old, and it seems dry. Should I use it, or have it worked over?

6. I have a number of hives in which combs are built cross-wise, and others in which the frames are stuck fast and combs built over. Should I loosen them all up, and try to have the frames all worked free so that I can handle them at any time? If so, when should I work them over?

7. Would it be better to transfer the bees from hives with crossed combs to new hives?

8. Have you queens to sell? If so, please quote me prices. I will want 12 or more. I have hybrids now, and want a good strain of Italians.

9. I think my bees are in fairly good condition, and I want to increase all I can this season. I will try the Alexander plan of increase, or can you suggest a better?

KANSAS.

ANSWERS.—1. You can transfer in fruit-bloom, or perhaps better wait till the colony swarms. Hive the swarm in the right kind of a hive, and then break up the old hive 21 days later, melting the combs, unless you prefer to transfer the best combs and form another colony.

2. Not so very important, but on the whole it is better to have only one size of frame in the apiary.

3. Maybe, and maybe not. Likely a little safer without the feeding, unless the weather is very warm for the first half of March. In my own practise I feel it is safer to do no feed-

ing except to make sure there is abundance of feed in the hive.

4. All things considered it may be well to wait till June, although if you want to rear queens from your new stock you can get one earlier from the South, or else a last year's queen from the North. There ought to be no difference between Northern and Southern queens, only a queen may be reared earlier South than North, and a queen reared too early is not likely to prove so good.

5. The probability is that it is all right to use it as it is.

6. By all means get them in such shape that each frame may be lifted out. Do it when bees are gathering, at which time they will quickly mend all breakages; and it is better to do it before the combs are filled with honey. In fruit-bloom is a good time.

7. Not if the old hives are all right.

8. I don't sell queens except now and then as accommodation, and don't think you would want queens from me, for my best queens are generally hybrids, and there is danger of foul brood here.

9. It doesn't make so very much difference what plan of increase you use, only so that you manage to have all colonies *strong* before winter. Remember that it is more important to have a large number of bees in each hive than it is to have a large number of hives with a small number of bees in each.

Using Old Foundation—Ventilation to Prevent Swarming—Using Moldy Combs—Getting Swarms Cheap.

1. Seeing that article in Gleanings, by F. Greiner, in regard to bees being slow to go to work in last year's foundation rather disturbed my peace of mind, as I have a large quantity of starters (50 pounds) left from the total failure of last year, and suppose you are in the same fix. Part are in the sections and part in the box, as it came from the factory, and it ought to be all right, I should think. I dislike cutting those out of the sections, as they are put with hot wax, on three sides *ala* Yoder, which plan I am sure, if you tried once, you would never have any further use for a Daisy machine. It is far faster for me, anyway, than the Daisy, and saves so much trouble with the full sheets buckling so.

2. How would it do to raise up an ordinary 8-frame hive, and put a super under it through the swarming season to help keep them from swarming? Probably the sections would be badly stained. My bees are black, and being near the house and neighbors, I cannot handle them as I would like to, to prevent swarming, etc. I will have the yellow bees some day, I hope.

3. I have a large number of empty combs which I bought this winter, in which the bees have died, and parts are moulded and smell badly. Where would you store such combs? I always have them in the cellar to keep the moths away. How can I get my bees to clean them up so I can use them for extracting, and to hive the new swarms? I have noticed that it is hard to get the new swarms to stay in such hives, but I suppose it would help to give them a frame of brood.

4. Part of the hives I will take to a neighboring bee-man, and he will fill them with his new first swarms, for \$1.00 a piece. This is quite cheap, is it not, and ought to pay me to do it? The bee-keeper in question has 40 or 50 colonies, and some years he does not get enough honey to supply his family. A friend of mine who is rather deaf, and misunderstood what I said, told the bee-keeper how well my bees had done the last year, and what a lot of honey I sold. He said he did not believe it at all. If I got any honey, it was because I fed my bees sugar and molasses, and the bees had made that into honey. Just think of it, from a man who has kept bees for years and years, and then the ideas and questions that otherwise well posted people will ask about bees are sometimes very amusing. I have noticed when you get a good crop at Marengo, we do here, too, although the conditions must be far different, as this is a very hilly country; but 1908 was a bumper year, also 1903.

NEW YORK.

ANSWERS.—1. If it would be just as convenient, I would put foundation in sections and have it on the hives within 24 hours after it left the mill. The fresher it is the better. But although I believe it makes a difference to have it fresh, I think that difference is very little. As a matter of convenience the foundation is put in my sections some time before the next year. I have had them filled all right after having stood in the supers for 4 or 5 years, so long as they had never been on the hives. Even if they have been on the hives

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they are all right if they have not been on when the bees were idle. It never seems to do any harm to have them on a little too early, but if they are left on after the harvest closes, and more or less painted with propolis, the only thing to do is to pull out the foundation and melt it.

It takes some degree of expertness to succeed with the Daisy fastener, and some make slow work of it. Possibly with enough practise they would do all right.

2. I'm afraid the sections would be darkened, but if you would raise the super before the bees began sealing any sections it might not be so bad.

3. Leave them piled up anywhere in doors or out, so they will have the benefit of freezing to kill any eggs or larvae of the moth. The moth will not disturb them till the weather is quite warm and bees are flying well, even if left till in June. In fruit-bloom you can set a hive-body filled with combs under a strong colony, forcing the bees to go down through the idle combs, which the bees will clean out. When well cleaned out thus, I think you will find that the swarms will prefer them to foundation.

4. Yes, you will do well to get swarms at a dollar each, and if your neighbor gets so little honey he may do well to sell swarms at that price. From what you say about him he probably does not read many bee-books and bee-papers.

Introducing Queens—Keeping Queens—Other Questions.

1. Can I introduce an Italian queen in the same cage in which she is mailed to me by placing the cage on top of the brood-frames for 2 days, and then set her free among the bees? and should the old queen be removed at the time the new queen is placed on top of the frames in the cage?

2. If you wanted to keep a queen for 10 days or 2 weeks, and didn't need her in the hive, where would you keep her, and how would you feed her?

3. My bees are bringing in pollen, and not a flower in bloom, and a few days ago we had a hard freeze. Where do they get it?

4. I have 3 colonies in 8-frame hives; had 12 last fall, but 9 died because of worms and starvation. Could I have prevented this by feeding them on sugar and water, and if a little honey is added wouldn't it keep the sugar from granulating in the combs?

5. To make the 3 extra strong, how would it do to place a second hive-body under them, with full sheets of foundation, to give the queen extra room, and, when the honey season opens, give them all the bees and the best of the brood and use the comb for swarming? I have no extra comb.

6. Swarming begins here April 15; according to that, when does the bee season open, and when should I put on supers?

7. Should I introduce Italian queens before or after the swarming season?

8. Last summer, I had 12 colonies in boxes, they gave 12 swarms, which I put in hives; 9 of these died in the fall, and only one box-hive colony died. I robbed the box-hives, so I have 11 box-hives and 3 frame hives. What made the box-hive colonies do so much better?

9. Are bees from an Italian queen mated with a black drone any better than the regular black bees, and is their color yellow?

10. Do you think I could do better business running for chunk honey in shallow frames, than for section honey?

11. How many colonies of bees did you have last summer, and how much honey did they produce? Did you have a good honey season?

GEORGIA.

ANSWERS.—1. Nowadays all queens are mailed in introducing cages provisioned with candy which the bees eat out, thus releasing the queen, but generally they are so arranged that the candy is not accessible to the bees of the hive till the bee-keeper uncovers it. It will be all right to leave the queen as you say for 2 days; then remove the old queen and at the same time uncover the candy so the bees may release the queen. That is safer than for you to let the queen out of the cage yourself.

2. Put her in a cage provisioned with candy, put the cage on top of the frames of any strong colony, or else in the house where it is warm.

3. I don't know.

4. Yes, to both questions. But feeding will not keep out the worms. Do that by keeping the colonies strong, and introducing Italian blood.

5. Excellent plan, provided the colonies are strong enough in the first place to fill more than the one story, which they may well be.

6. You cannot gauge the time of putting on

supers by the time of swarming. It differs in different places, and also in the same place in different years. Find out as nearly as you can when the flowers first open that give you your harvest, and give supers at that first opening. Or you can go by the old rule to put on supers when you first see bits of white wax along the top-bars and upper part of the combs.

7. Either or during swarming.

8. The old combs are better for wintering than new ones, having the old cocoons in the cells to make them warmer. Besides, the new colonies had to use part of their honey in building out their combs, and the old ones were spared this expense. Possibly the size or shape of the hives may have had a little to do with it. A movable frame hive is much more convenient for a bee-keeper than the old-fashioned straw hive, but the latter is better for the bees.

They may be as good workers as pure Italians, and they vary in color from pure black in appearance to pure Italian. But the after generations of hybrids do not hold out in quality like the first cross.

10. Very likely. At least some of the leading beekeepers in your State think so.

11. I didn't spend the summer in getting honey, but fighting European foul brood. Besides, the season was a failure. I started with 155 colonies, increased—I mean decreased—to 122, and got less than 1,000 pounds of late honey.

Feeding Bees—Introducing Queens—Laying Workers—Shading Hives—Ventilating Hives—Sweet Clover.

1. Will 2 pints of granulated sugar and 1 pint of water make 8 pounds of stores? If not, how much would it be in weight, that is, after the bees cap it over?

2. Please explain the Abbott plan of introducing queens.

3. What is the Sibbald quick method of introducing queens? Mr. J. L. Byer speaks of it in the June number of the American Bee Journal, but I have lost that number.

4. What is your way of introducing queens? Please explain the plan.

4. What is your way of introducing queens when you get them by mail?

5. What is the best way of getting rid of laying workers, and not destroy the colony?

6. Do you keep your hives in the shade in summer? I see some advise no shade. Which is best?

7. Are the long-tongued, red clover Italians as yellow as the goldens?

8. What are the exact measurements of a 10-frame hive, inside measure?

9. I see you advocate slipping the supers back to give more air. What would you do to keep the rain out between the hive and super, for there is bound to be a gap?

10. I am thinking of sowing about an acre of sweet clover on wheat early in the spring. Do you think it will work all right? I will let it stand a year or so for the bees, and then put it in alfalfa.

11. Did you ever try, or see used, the Tri-State hive? If so, what do you think about it for a beginner to adopt? I have trouble with the dovetail pulling loose at the corners.

MISSOURI.

ANSWER.—1. If the 2 pints weigh 2 pounds, it ought to be about 2½ pounds when sealed.

2. Put the new queen in the hive in a provisioned cage with the candy protected so the bees of the hive cannot get at it. In about 2 days remove the old queen and give the bees access to the candy so they may liberate the queen.

3. Hunt the queen out that is to be removed and put her in a wire cage on top of the frames. Then the queen that is to be introduced is laid on top of the same frames, too, and left till evening. Now remove the old queen, and put the new queen in the cage from which the old queen has just been taken, and over the end of the opening fasten a piece of comb foundation. Place on the frames again, after punching a few small holes with a pin through the foundation and release the queen. Sometimes Mr. Sibbald rubs the dead body of the old queen, that has just been killed, over the outside of the cage she has just come out of.

4. Not always the same, something depending on the value of the queen. I may use something like the Abbott plan, putting the new queen at the entrance if the weather is warm enough, and not removing the old queen for about 3 days. If I want to be entirely sure of safe introduction, I put some frames of hatching brood into a hive, not a bee with them, put in the queen, and set the hive on top of a strong colony, with wirecloth be-

tween the hives so that the heat can ascend from below, the whole being closed bee-tight. In 5 days I allow the upper hive an entrance large enough for one or two bees at a time, and as soon as I think enough bees are present I set the hive on a stand of its own.

5. Give them a virgin queen just hatched, and a frame of eggs and young brood at the same time. Generally break up the colony.

6. I like hives in the shade of trees, chiefly for my own comfort.

7. I don't know that there is any definite variety called red-clover Italians. At different times bee-keepers have had bees that did unusually well on red clover, and some of them may be darker in color than others.

8. Unfortunately there are no "exact measurements" that all makers have always used in making hives to take 10 frames of Langstroth size. The depth of the frame being 9½ inches, if ¼ inch be added to that to make a bee-space, we would have 9¾ for the depth of the hive. But a very little shrinkage would make bad work, and to make sure against that the hive is made 9½ inches deep. The length of the frame is 17½, and if ¼ inch be added at each end we would have 18½ for the length of the hive. But that makes very close work, and bees are not much inclined to build at the ends of the hive, so the length is not less than 18½. For an 8-frame hive I think there is general agreement on 12½ for the width. That allows 11 inches for the 8 frames spaced 1¾, and 1½ inches for a dummy ¾ thick with a space each side of it. If we add twice 1¾, or 3½ inches, for 2 additional frames, we would have 14½ for the width of a 10-frame hive. But for some reason, that never seemed satisfactory to me, the dummy is generally omitted in 10-frame hives, and they are made 14½ inches wide. So I think we may say, as nearly as we can come to standard, that the inside measurements of the 10-frame hive are 18½ x 12½ x 9½. As a side remark, I may say that I think some of the hives are not more than 9½ deep, although I think they were 9½ when new.

9. Nothing. I never knew any harm to come from rain entering the gap.

10. Yes; sweet clover will work right almost any way, provided the ground is not so soft that the plants will heave in winter.

11. I have never seen the Tri-State used. It must be that you do not nail your dovetailed hives. They were never meant to be used without nailing, and when nailed they are the strongest made.

Ventilating Hives

1. When buying swarms of different parties, I took a 10-frame body filled with full sheets of foundation, and told them to put a piece of section under the cover and shade the hive, yet about ½ say they won't stay hived. I am afraid if I put in one or two drawn combs, I may get some foul brood. The entrance is ½-inch by the width of the hive. What can I do?

PENNSYLVANIA.

ANSWER.—The piece of section raises the cover ½ of an inch only at one spot. That does not give ventilation enough. Instead of putting anything under the cover, shove it forward so as to leave an inch or more of the top of the hive uncovered at the back end. Also give abundant ventilation at the bottom.

No Queen-Cells—Shade for Bees—East Florida as a Bee-Location

1. I am a beginner in bee-keeping. Last summer I had 9 colonies of bees, 5 were new swarms and 4 were transferred from box-hives. The 4 that were transferred in July starved in January, and in examining the combs I did not find a single queen-cell in either hive. Should there have been a queen-cell, one or more in each hive?

2. On page 95 it leaves the impression that bees need no shade. My bees, when left in the hot sunshine, loaf on the outside of the hive. Do you know of a remedy for this loafing? and do you think that in this part of the State bees should be shaded some?

3. Do you think the east coast of Florida is a good location for bees? I have never read anything in the American Bee Journal about that State. I am thinking of locating there, is the reason I ask.

ILLINOIS.

ANSWERS.—1. No, a queen-cell would have been of no advantage.

2. On page 95, to which you refer, the answer was given at the Wisconsin convention: "What do you want shade for? If you must have shade, use shade-boards only. Too much shade makes the bees cross and slow

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to go to work. Sunshine not only makes better workers, but better honey." I don't know who gave that answer, but it sounds as if it had been given on the spur of the moment, without time for thought. No answer is given to the question, "What do you want shade for?" but what comes after seems to take it for granted that it is wanted for the bees. Many bee-keepers, myself among the number, want shade for the bee-keeper rather than for the bees, in which case a shade-board does no good whatever. I want the shade for my own comfort when sitting beside a hive, and for that purpose it is hard to have anything better than a deciduous tree, which allows the sun to shine upon the hive early in the year, but not during hot weather. Localities differ. There are places where it is better for the bees to stand out in the open; and in some places they need the shade. What is best for a Wisconsin bee-keeper may not be best down South. In your locality I should like hives under trees.

3. I don't know, but I think good locations may be found there.

Repairing Broken Comb, Etc.

1. We have a lot of comb in frames, some of it is broken and looks rough. Will the bees patch this up? It is my intention to give this comb to the first new swarm.

2. Some of this comb has a lot of some liquid substance that looks dark, and glistens. The cells are partly filled with this stuff. Will the bees be able to clean this out, or can I remove it before placing it in the hives?

ANSWERS.—1. Bees are marvelously good repairers. No matter how much the cells may be broken down, if the midrib or middle wall still remains, the bees will soon put all to rights. If the midrib be entirely gone at any part, the bees will restore it, but there is danger that any holes thus filled will be filled with drone-cells. You may, however, avoid this by fitting into the vacancies pieces of worker-comb, tying them in if necessary, and the bees will fasten them together nicely.

2. Likely it is only pollen and honey, and the bees can take care of it.

Cleaning Out Hives Where Bees Died

What is the best method of using up the honey of about 20 colonies of bees that died last winter? It is all honey-dew and dark honey, and only fit for bee-feed. It is in 8-frame dovetail hives, and they are about half full; and some of it is quite damp. I cleaned out most of the dead bees and stored them in the cellar, but I am afraid they will get moldy if left in there very long. I lost 20 colonies out of 45, and think it was on account of the honey-dew. If I would set them out, putting 3 or 4 hives in a pile, and leaving a small entrance for the bees to clean them out, would it cause the stronger colonies to try to rob the weaker? If I did that way would you put them out now? And would you put them all out at the same time?

IOWA.

ANSWER.—The only object in leaving a small entrance is to keep the bees from tearing the combs when the combs are few compared with the number of bees to work at them. In the present case the combs are so many that such care need not be taken. Moreover, brood-combs of some age are not likely to be torn. So you should set the whole out, fully exposed to the bees, preferably a few rods distant, and in 2 or 3 days the job will be done. It ought to cause no robbing if you do nothing foolish in the way of opening up hives while the work is going on.

Strengthening Weak Colonies—Golden Queens—Getting Increase

1. I found a colony yesterday which, from spring dwindling, had gone to only a few handfuls of bees and a queen. As it is warm weather here with many wild flowers in bloom, and the bees carrying in any amount of pollen from the maples, I proceeded as follows, and want to see what you think of the plan:

I went to a strong colony, taking a frame covered with about 10 square inches of brood, and brushed the bees off so as not to get the queen, and placed it in a weak colony. Then I moved the strong colony about 6 feet distant from its former stand, and set the weak one in its place. Since it has a queen and weighs about 50 pounds with the honey, and has been strengthened with that brood and the field-force of the other colony,

do you think it will come through? Will that usually work?

2. Did you ever use any golden queens? Do you think that there is anything to the story of their being poor winterers in this State?

3. What do you think of the plan of increase by giving a queen and 2 frames of brood to a colony and setting it on the stand of a colony, as I proceeded above? What plan of increase do you advise?

ILLINOIS.

ANSWERS.—1. Usually the plan will work, but there is danger that the queen of the weak colony will be killed. It is safer to brush some bees on the ground a little distance in front of the weak colony, so that the older bees will fly back home and the young ones crawl into the hive of the weakling. If only a few are added in this way, the queen will not be endangered. Then the next day more can be added, and for several days if desired. Each day the danger will be less from larger numbers being added, as there is a larger number in the hive to defend the queen. Or, after a few have been added in this way, a frame of advanced brood with adhering bees may be added.

2. Yes, I've had such queens. There may be good and there may be poor wintering among them.

3. As you may have guessed from the first answer, I don't like the plan. The best plan depends upon circumstances. For some it may be natural swarming, for some the nucleus plan, etc. Study up the whole matter carefully, and then decide which will fit you best.

Bee-Trap — Swarming — Transferring — Clipping Queens

1. Do you advise the use of a queen-and-drone trap?

2. How soon would you put on the trap again after swarming the first time in the spring?

3. How often would you allow a colony of bees to swarm in one season?

4. When would you advise transferring bees into new hives from old boxes to get the best results?

5. When would you advise clipping a queen's wings?

ILLINOIS.

ANSWERS.—1. It is desirable in a case where a swarm is expected to issue with no one on the watch. It merely holds the queen until the bee-keeper can deal with the case. It is also useful in some cases to catch undesirable drones. But many bee-keepers find no use for one.

2. Generally there is no need of a trap for the queen at all, after swarming. But if it is needed to catch drones, don't have it on a hive with a virgin queen until perhaps 10 days after her birth.

3. That depends. If honey and no increase is desired, then it's better to have no swarming at all, if you can prevent it. If you care for increase alone, then bees will hardly swarm too much. Generally, where some increase is desired honey is also desired, in which case it is better not to have more than one swarm from each colony.

4. Wait till the bees swarm, hive the swarm in a good hive, and transfer 21 days later.

5. Clip any time convenient as soon as bees are gathering, and after that clip each queen as soon as convenient after she has begun to lay.

Too Early Dividing for Increase

In Farm Journal, in the column for bee-keepers, appears the following paragraph: "April 15th is a good time to divide colonies for increase; and if only a few colonies are split up for increase, one can make increase and secure a surplus at the same time."

Would not a few words of caution in the April American Bee Journal, in your Question-Box, help to carry some innocent bee-keepers through April and most, if not all, of May, without thus spoiling good colonies?

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ANSWER.—Something depends upon the interpretation put upon the last clause of the sentence quoted. Some may understand it to mean that in an apiary of say 50 colonies, 5 or 10 may be divided April 15, leaving the remaining 40 or 45 for surplus; and thus there would be an increase of 5, 10, or more, and a good surplus from the 40 or 45 not divided. Likely, however, a larger number will understand it to mean something like this: If you have only a few colonies, and

want to increase and at the same time get a reasonable crop of honey, you can easily do so by dividing your colonies April 15th, for by dividing thus early each part will have plenty of time to build up good and strong for the harvest.

Again something depends. In the South, in localities where bees swarm naturally April 15th, conditions are different from what they are in the North, where natural swarms do not occur till in June. Most of those who read the Farm Journal likely live in the North, and it requires no argument to show that in the North a colony divided April 15th will have a longer time to build up for the harvest than if divided June 1st. That has a very attractive look to the beginner, who says to himself, "If I wait to let the bees swarm naturally, that will seldom be as early as the first of June, and the time to build up for the harvest will be very short, for clover will be yielding perhaps by June 10th. If I divide April 15th, the time for building up will be so much longer that there will be a great gain. But why not give still longer time to build up, and thus get a rousing crop. Glad I thought of it. March 15th for me."

But if he divides in March, he will find that something more than time is needed. If he divides 5 colonies, expecting to have strong for the harvest, he is more likely to find that part of them have died, and none of the rest is very strong. Early in the season a weakling is not likely to build up at all. On the contrary, it remains stationary or becomes still weaker, showing no increase until the weather becomes warmer, while a colony of considerable strength can keep up heat enough in the hive to increase right along even through some very cold days.

Another thing is the matter of queens. In the North a queen reared much before about June 10th, is not likely to be of the best character, if indeed she does not disappear before she gets to laying.

It can hardly be said with too much emphasis, that the average attempt to divide early in the North, with the idea of increasing the honey crop, can only end in dismal failure.

Winter Work in the Apiary

You may suppose that there is nothing to be done in the apiary during this cold weather. So I thought, but passing through my bee-yard this morning I happened to notice that the entrance to one hive was almost closed with dead bees. I at once went to each colony, and with a small switch pulled out the dead bees in much greater numbers than I expected, so early in the winter.

This is a good time to repair empty hives and to paint them nicely, using a little putty to fill cracks and nail-holes. I have my hives all painted in two colors—the brood-chambers red, the supers white. This plan, to my eye, gives a more attractive appearance to the apiary. Were I skillful in free-hand drawing, I would paint flowers on each super. This certainly would add much to appearances, and when nectar failed in the field, might help to pull the little bees through until another flow!

If you are handy with tools, make a few extra hives, and surely some extra supers.

These are easily made, and we ought to have at least 2 supers to each brood-chamber. Some bee-men have 3 and 4, and tier up when needed. In the December American Bee Journal is an account of two bee-men, one of whom had but one super to each colony, and as soon as this was full, not waiting for capping and ripening, he extracted: it was so easy to throw the honey out when not capped. This man attempted to ripen the honey himself, but failed, and lost heavily as he could not sell the thin stuff. The other man had extra supers, tiered up, gave the bees time to cap and ripen the honey, and he secured fine honey and sold at a fancy price.

Make your hives and supers now, and be ready for the great white clover flow which is predicted for 1910.—T. M. BARTON, in Farmers' Home Journal.

Noble Old Banner.

While I take two other bee-papers, and have several books treating on bees, I could not do without the American Bee Journal. Noble old Banner, O long may she wave!

H. E. GALVEAN.
Rt. 1, Carsonville, Va.

American Bee Journal



Bees Doing Well

I must say I like the American Bee Journal very much. I put out my bees on March 18th, and they are doing well. Two colonies died out of 10.

AUG. KUEHN.

Waukon, Iowa, March 28

Expecting a Good Season

Bees are 25 days earlier than any previous year I can remember. They have wintered well, as far as I can hear. We are looking forward to a good season.

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We had two inches of rain here last week, so the prospects for a honey crop are much brighter than when my friend Mendleson wrote, on Feb. 21st. All reports say that the bees have wintered well, and are in first-class condition.

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There has been a great loss in the number of colonies of bees in Southwestern Ohio this winter, fully 50 percent being dead; and more weak colonies than I have ever seen before. That means slow breeding up for the white clover flow, which is our main honey producing plant. At this date white clover looks good. The cause of the great winter loss was honey-dew, and a shortage of winter stores. J. G. CREIGHTON.

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The past season was very unfavorable to honey-producers in this State, many bee-keepers failing to secure any surplus whatever. Fortunately we succeeded in getting a fair crop, due in no small degree to the helpful teachings of the American Bee Journal and other publications. The spring has been an unusually late one, but the turning point has been reached, and colonies are rapidly becoming populous. Indications are favorable for a good honey crop.

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Prospects for Good Honey Season

We are having one of the earliest springs on record. March began with warm weather, and has continued warm throughout the whole month. I put out my bees the 24th; they came out strong, and began at once to carry pollen from soft maple and elm. I have about 50 colonies. Prospects are for a good honey season. We had a very poor crop of honey here last year. There was not enough honey to supply the demand of the local dealers.

Wm. EHLERT.
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Questions of the Season

We are having a wonderful spell of weather. Since March 15th, 10 days ago, the weather has not only been spring-like, it has been summer-like. My bees are having such a time as may be experienced by bees in this locality at this season of the year only once in many years. I placed the bees in the cellar (a few over 100 colonies) about Nov. 15th, and took them out March 17th, in almost perfect condition. The question is not one of feeding, but of taking away honey to give the queens room to lay. Some of this honey will be needed later on, no doubt; but I am well satisfied it would be a mistake to leave it all in the hives now.

As early as last Sunday (March 20) the soft maples along the Wisconsin river were out in full bloom, and the bees roaring on them. In fact, there has not been a day since the bees were removed from the cellar that the bees could not work all day. Elms are now out, and no telling what amount of bloom

and pollen is accessible. As soon as I had the hives on the summer stands, I made them warm and snug on top by wrapping with tarred roofing-paper. For this purpose I procure a grade of roofing-paper at a cost of 64 cents per roll of 100 feet. This is better material for wrapping hives than the ordinary tarred paper, and costs less.

Now these questions confront us: How long will this New Mexico weather continue? If winter weather comes on again, as it is quite possible that it should here in Wisconsin, what will be the result in colonies of bees that have been getting pollen as they have here, and undoubtedly have started as much brood as they possibly could? It might have been much better to have prevented such early breeding; but how could it have been done? The conditions for taking bees out of winter quarters were ideal, and while they have been contented up to that time, not one bee-keeper in a hundred would have wished to keep them confined any longer.

I wonder what Dr. Miller is thinking about this situation? It may come out all right—all depends upon weather conditions; but it will certainly be hard on bees and fruit if after having a period of such weather as we have now, there should ensue a period of hard freezing weather. Fruit is safe for a time, as no trees are in blossom yet, but if the weather continues long as it is now, everything will come out. I think in such a case the bees would stand the best chance. Colonies that are very strong can probably protect their brood, all except newly-laid eggs in the outer circle. The loss of these eggs would be no detriment. Weak colonies could be set over strong ones with a queen-excluder between, as advised by Mr. Alexander for the treatment of weak colonies in spring.

Aside from the weather conditions, which are phenomenal, prospects for a honey crop in the North and Central West are good. This brings in the question: What will be the effect on present honey prices of a good crop this year? Let us hear from others on these questions that are of interest to each and all.

HARRY LATHROP.

Bridgeport, Wis., March 25.

Bees Wintered Well

The weather is so fine that I have taken my bees out of the cellar. Splendid wintering—14 colonies out of 17. The 3 dead were nuclei that were weak. Bees were in cellar 4 months. Two colonies of "driven" bees, secured from a neighbor in November, wintered almost wholly on sugar syrup. They each had a comb of honey from another hive, but took the syrup and left the honey. Five strong colonies, bought in Iowa and shipped by freight, were put into the cellar without flight the day they arrived, and have come through nicely. The next few weeks will be trying, as we have considerable wind. There was a heavy snow on the ground all winter.

EDWIN EWELL.

Waseca, Minn., March 23.

Working Bees for Best Results

In the Report of the National convention held at Sioux City, Iowa, I notice a paper furnished by Mr. A. C. Allen, who gives the plan I have followed in most particulars for many years, and as I have had good success I intend to continue the plan.

I notice in a bee-paper last season that almost every one heard from in giving their experience in preparing bees for wintering, advised doing all feeding in the fall so as not to have to do any spring feeding. Fall feeding is all right so far as it goes, for the bees should have plenty to live on, but it makes no difference with me how much stores the bees may have. I feed in the spring, anyway. Of course, one should feed at any time the bees may be short of stores, if found so—at any time during winter or early spring—so as to bring them through until fruit-bloom; as soon as that is over, in order to keep up brood-rearing started during the blooming period, I then feed about every other day, according as needed to keep the bees stimulated to brood-rearing, so as to have them rear lots of young bees; and I try to have them ready with a large lot of bees by the time the white clover comes in bloom, which is about June 20th with me; then I get them to work storing in the supers, and I seldom ever have any swarms at all; and, if any, they are rousing good ones.

After the white clover is past, or about over, I divide, if I wish increase. I work my bees mostly for extracted honey, although I have worked some for section honey also on this plan. One cannot control swarming

quite so well with section honey as for extracted, but with careful manipulation one may succeed even with section honey. I use the 10-frame hive exclusively. I am sure I could not be so successful in securing any kind of honey with a hive less than the 10-frame, as I want rousing colonies when I expect surplus honey, or even large swarms.

I have followed this plan for many years with good success. What I have done others may do. But I have not then been as successful as the report that Dr. Miller gives, or Mr. Doolittle. I think I do not give my bees as close attention as either of these leading bee-keepers, as I am much occupied with other business during the very time the bees need the most attention; but I try to give them as good as I can, not to neglect my other business, although I have never gone through a season yet but what I thought my success could have been much improved with more attention.

If you will remember, Mr. York, I gave my experience once in the Progressive Bee-keeper, some years ago, stating that I had secured 200 pounds of honey per colony; but when my bees were at their very best on Spanish-needle, it turned so very dry and hot all at once that the nectar ceased very suddenly. If it had continued in bloom as it usually does for a longer period, I am sure my average would have been much better. You said in commenting upon my experience at the time that you would "like to know how much I was expecting." I have taken 200 pounds in three different seasons with my plan, and while my success has been much over the average, I have never thought that I did so very much, nor near the possibilities. This only shows that with good care, bees, or in fact any business, may be a success—at least very much better than the average.

J. W. ROUSE.

Mexico, Mo.

[Mr. Allen's plan was given on page 93, last month.—EDITOR.]

Bee-Keeping in Ontario

My bees wintered tip-top, only losing one out of 24 colonies, and that through putting on taffy not made hard enough, and it melted and smothered them. Never have my bees come through a winter in better shape, both in strength and stores.

The past season was the best, for both early and late flowers of honey, we have had for a long time in this section; no honey-dew of any sort, and bees went into winter quarters in first-class shape.

I winter my bees on the summer stands in chaff hives. They had no chance for flight this winter from the middle of November until the 6th of this month. We had a nice, steady winter with but three or four cold dips below zero, and then only for a day or two at a time.

TOM COOLEY.

Sheffield, Ont., Can., March 22.

Some Weather Prophecies

I have been quite amused to notice in the bee-papers about shaking energy into the bees, by prominent bee-men. It reminds me very forcibly of an old saying, which has been handed down through our ancestors from Switzerland to the present generation, and which is as follows:

First, when the bear comes out from his den of long sleep or hibernating, and sees his own shadow on Feb. 2d, or Candlemas Day, bruno will go back and remain in his den 4 weeks, if not 6 weeks.

Second, in the month of February the lion does not shake his head; then he switches his tail.

Third, if Mathias, on the 24th of the second month of the year, finds ice he will break it; if not, he will make it.

First, to understand that prophecy of our ancestors, may be accomplished as follows: Those mountaineers of Switzerland were thoroughly acquainted with the nature of bruno's winter quarters. Somewhere in the 70's, I had the privilege of taking a night's lodging on Candlemas Day with J. L. Byer, of Mt. Joy, Ont., who owned a large bear. The following morning, the bear being burrowed in straw in the barn, made his appearance fastened to the barn-post with 15 or more feet of chain. The writer witnessed his action at the door of the barn, looking and sniffing for a few moments and then went back into the den again, it being very cold, as it was below zero, and we had our overcoats on to keep warm. As the sun was shining all day, the owner said that the bear would make his appearance again in 4 weeks.

Fifty years ago I had the privilege on Candlemas Day, it being cloudy, drizzling and

American Bee Journal

summerlike, of taking a gun and going squirreling. The coon, chipmunk or ground squirrel, and the like, were ransacking the bush, appearing like vernal life again. As chance would have it, myself and 4 other men with seine or draw-net on Candlemas Day, in '67 or '68, it being a very mild winter up to Feb. 2d, had done some fishing, it being a fine, warm day, and no ice on the fishing "ground," we fished a lot, of all kinds of fish with the draw seine, simply showing that one extreme can be followed by another.

Second, the lion has his play to perform as well as the bear, in as much as the sun enters constellation Capricorn, which places our earthship in constellation Leo or Lion on the meridian at midnight. Now, the lion being at home in a warm climate does not shake his head the first half of the winter, and it not being cold and stormy will switch his tail in the last half of the winter, representing the cat when mousing, the nearer the mouse will approach the more anxiety the lion will show as well.

Third, February 24th, called Mathias Day, the writer observed more than once that the winter Boreas didn't form much ice, and the February thaw made its appearance, and made it like spring weather. The white mantle was laid aside, both on land and water, so the ice-men lamented of having ice stored away. Mathias with Boreas in company showed their power; March 20th there were 10 or 12 inches of ice in inlet waters in shape for the ice-men to store up.

The bumble-bee and honey-bee give good forecast of the future weather. Last November there had been a pleasant squaw winter of 14 days duration, and the last 3 days of that month the honey-bees carried in pollen and some honey like dew. They have not had a cleansing flight since, but seem to do fine so far, most of the time being nearly covered with snow. The bumble-bee in wet summer weather has the nest made in sheltered places, and in hot summer weather in the ground to escape the summer heat.

In summing up the three prophecies, the whole creation is so interlinked that the wise observer can understand the financial welfare of the future, whether prosperity is in store or not.

J. M. WISMER.
Jordan Station, Ontario.

Wants and Exchanges.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

Eggs for Hatching.—Single Comb White Leghorns. Send for prices.
3A3t SAMUEL RAFF, Morton, Ill.

Golden Wyandots. Best and most beautiful chicken on earth. Stock and eggs for sale. J. R. DOUGLAS, Mound City, Kan. 3A3

RINGLET B. P. Rock Eggs from extra-light birds. First Pen, \$1.50 per 15 eggs. Second Pen, \$1.00 per 15.
4A2t E. E. MOTT, Glenwood, Mich.

WANTED—100 or more Colonies of Bees in Southern Wisconsin. State price, style of hive, and location. Address, 721 E. 50th St. 3d, Chicago, Ill.

WILL EXCHANGE GLADIOLI.—I have quite a collection of these flowering bulbs. To increase the same, I will exchange good blooming-size corms for varieties I have none of. I will also exchange Dahlias; only one tuber of a kind. What have you? Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

GLADIOLI AND DAHLIAS.—I have a splendid mixed collection of Gladioli in various colors, shapes and sizes that I am offering in bulblet form at 25 cents for 2 hundred, by mail. This is a good way to get a start by growing your own bulbs. Some will bloom the first year; the great majority the second year. Dahlia tubers, named kinds, 25 cents each. Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

Our Book Notices.

By LEWIS EDWIN YORK,

Supt. Public Schools,

MARTINS FERRY, Belmont Co., OHIO.

British Poets of the Nineteenth Century.—By Curtis Hidden Page. Chicago: Benjamin H. Sanborn & Company. Cloth. 935 pages. Price, \$2.00.

Professor Page, of Columbia University, has selected and arranged the choicest poems of 15 British authors from Wordsworth to Swinburne, and the publishers have made a most delightful book that should have a place in every well-selected library. Most people do not read enough of poetry. Yet the habit is easily acquired. The results are astonishing. One's ideals are elevated. He inhales the ozone of a higher region. He finds uplift, inspiration, new energy for the common tasks of life.

Civics and Health.—By William H. Allen, Secretary of the Bureau of Municipal Research. Introduction by William T. Sedgwick. Illustrated. Chicago: Ginn & Company. Cloth. 410 pages. Price, \$1.25.

It is only within very recent years that we have come into possession of tested knowledge relative to health, sanitation, public hygiene, etc. The book at hand deals with this vital subject in a truly popular yet scientific way. Doubtless it will be the means of saving thousands of lives and of enhancing the physical welfare of multitudes. The chapter on "The Patent Medicine Evil" is worth many times the price of the book. A knowledge of health science is absolutely essential to the maintenance of abundant bodily health and strength. Get and read this book.

Primer of Sanitation.—By John W. Ritchie. Yonkers, N. Y.: World Book Company. Illustrated. Cloth. 200 pages. Price, \$1.50.

Newspapers and magazines are full of the subject of individual and public health. Rockefeller has given a million dollars to fight the hookworm, and President Taft has recommended the establishment of a public health bureau that shall be national. The average parent will find in this Primer just what is needed for a clear understanding of all the diseases that are common, such as measles, tonsillitis, scarlet fever, grippe, colds, etc.

Alexander Hamilton.—By F. S. Oliver. New York: G. P. Putnam's Sons. Cloth. 474 pages. Price, \$1.25, for students' edition.

Every careful reader likes to have a half-dozen or more of the best of essays in his library. Here is a little volume with subtitle: An Essay on American Union. Its every page sparkles with the best output of a master English literary artist. The rise of political parties, the conflict of contending forces, the personal character of the leaders are all given in clear relief and admirable setting. No one can read this book without increasing his culture and getting a clear notion of the principles that governed the makers of our nation.

The Northwest Under Three Flags.—By Charles Moore. New York: Harper & Brothers. Illustrated. Cloth. 400 pages. Price, \$2.50.

The lover of history will find in this book, with its excellent map and pictures, the very thing to interest and inspire. The French, English and American flags have floated in succession over the Northwest. Out of this territory have been carved many States that are taking the lead in American affairs. In its absorbing chapters the author unfolds the story of the successive changes. To read the story of our country, and to know the heroism that was shown by our fathers in the winning of freedom mean the awakening of the best within us. We all need to learn the lessons of patriotism, protection and service, and this can be done best through the pages of history when the stories are told by men who have learned to see.

John Marvel, Assistant.—By Thomas Nelson Page. New York: Charles Scribner's Sons. Cloth. 573 pages. Price, \$1.50.

This is a marvelous book in many respects. It delineates in a most fascinating manner at least three very strong characters, of which John Marvel, the assistant rector of a wealthy Episcopal church, is the principal. While at times the language of certain characters in the book is anything but chaste, still, when the reader remembers the class

of people described, he can overlook those expressions. All in all, it is a strong book, and ought to help arouse a deeper interest in the poorer classes, and their conditions. It will repay a careful reading.

Our Clubbing List.

We have arranged with some of the best magazines and other publications to offer them in connection with a year's subscription to the American Bee Journal. If there are any others that you would like to subscribe for, be sure to let us know what they are, and we will quote you price. Our list so far as made up is as follows, the prices applying only to the United States, outside of Chicago:

American Bee Journal one year (75 cts.) Both

With American Agriculturist...	\$1.00	\$1.75
" Bee-Keepers' Review (new)	1.00	1.85
" American Poultry World...	.50	1.40
" American Sheep Breeder...	1.00	1.85
" Better Fruit...	1.00	1.75
" Breeders' Gazette...	1.75	2.45
" Canadian Bee Journal...	1.00	1.85
" Century Magazine...	4.00	4.75
" Circle Magazine, The...	1.50	2.25
" Commoner, The...	1.00	1.75
" Country Life in America...	4.00	4.75
" Delineator, The...	1.00	1.85
" Designer, The...	.50	1.40
" Dressmaking at Home...	1.00	1.85
" Etude, The (musical)...	1.50	2.25
" Everyday Housekeeping...	.50	1.40
" Everybody's Magazine...	1.50	2.25
" Garden Magazine...	1.00	1.85
" Gleanings in Bee Culture...	1.00	1.75
" Good Housekeeping...	1.00	1.75
" Guide to Nature, The...	1.00	1.85
" Harper's Weekly...	4.00	4.75
" House Beautiful, The...	2.50	3.25
" Housekeeper, The...	.75	1.50
" Human Life...	1.00	1.75
" Ladies' Home Journal...	1.50	2.25
" Little Folks...	1.00	1.85
" Market Growers' Journal...	1.00	1.75
" McCall's Magazine...	.50	1.40
" McClure's Magazine...	1.50	2.25
" Modern Priscilla...	.75	1.60
" Mothers' Magazine...	.50	1.40
" Munsey's Magazine...	1.00	1.85
" Nat'l Stockman & Farmer...	1.00	1.85
" New Idea Woman's Magazine...	.50	1.40
" Ohio Farmer...	.75	1.60
" Outing...	3.00	3.75
" Popular Science Monthly...	3.00	3.75
" Recreation...	3.00	3.75
" Review of Reviews...	3.00	3.75
" Scrap-Book...	1.00	1.85
" Scribner's Magazine...	3.00	3.75
" St. Nicholas...	3.00	3.75
" Suburban Life...	3.00	3.75
" Success Magazine...	1.00	1.85
" Sunday-School Times...	1.00	1.85
" Wallace's Farmer...	1.00	1.85
" Woman Beautiful, The...	1.00	1.75
" Woman's Home Companion...	1.50	2.25
" World's Work...	3.00	3.75
" World Today, The...	1.50	2.25
" Youth's Companion (new)...	1.75	2.50

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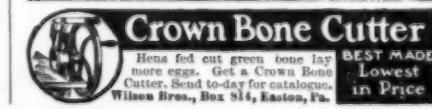
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and pollen is accessible. As soon as I had the hives on the summer stands, I made them warm and snug on top by wrapping with tarred roofing-paper. For this purpose I procure a grade of roofing-paper at a cost of 6 cents per roll of 100 feet. This is better material for wrapping hives than the ordinary tarred paper, and costs less.

Now these questions confront us: How long will this New Mexico weather continue? If winter weather comes on again, as it is quite possible that it should here in Wisconsin, what will be the result in colonies of bees that have been getting pollen as they have here, and undoubtedly have started as much brood as they possibly could? It might have been much better to have prevented such early breeding; but how could it have been done? The conditions for taking bees out of winter quarters were ideal, and while they have been contented up to that time, not one bee-keeper in a hundred would have wished to keep them confined any longer.

I wonder what Dr. Miller is thinking about this situation? It may come out all right—all depends upon weather conditions; but if after having a period of such weather as we have now, there should ensue a period of hard freezing weather. Fruit is safe for a time, as no trees are in blossom yet, but if the weather continues long as it is now, everything will come out. I think in such a case the bees would stand the best chance. Colonies that are very strong can probably protect their brood, all except newly-laid eggs in the outer circle. The loss of these eggs would be no detriment. Weak colonies could be set over strong ones with a queen-excluder between, as advised by Mr. Alexander for the treatment of weak colonies in spring.

Aside from the weather conditions, which are phenomenal, prospects for a honey crop in the North and Central West are good. This brings in the question: What will be the effect on present honey prices of a good crop this year? Let us hear from others on these questions that are of interest to each and all.

HARRY LATHROP.

Bridgeport, Wis., March 25.

Bees Wintered Well

The weather is so fine that I have taken my bees out of the cellar. Splendid wintering—14 colonies out of 17. The 3 dead were nuclei that were weak. Bees were in cellar 4 months. Two colonies of "driven" bees, secured from a neighbor in November, wintered almost wholly on sugar syrup. They each had a comb of honey from another hive, but took the syrup and left the honey. Five strong colonies, bought in Iowa and shipped by freight, were put into the cellar without flight the day they arrived, and have come through nicely. The next few weeks will be trying, as we have considerable wind. There was a heavy snow on the ground all winter.

EDWIN EWELL.

Waseca, Minn., March 23.

Working Bees for Best Results

In the Report of the National convention held at Sioux City, Iowa, I notice a paper furnished by Mr. A. C. Allen, who gives the plan I have followed in most particulars for many years, and as I have had good success I intend to continue the plan.

I notice in a bee-paper last season that almost every one heard from in giving their experience in preparing bees for wintering, advised doing all feeding in the fall so as not to have to do any spring feeding. Fall feeding is all right so far as it goes, for the bees should have plenty to live on, but it makes no difference with me how much stores the bees may have. I feed in the spring, anyway. Of course, one should feed at any time the bees may be short of stores, if found so—at any time during winter or early spring—so as to bring them through until fruit-bloom; as soon as that is over, in order to keep up brood-rearing started during the blooming period, I then feed about every other day, according as needed to keep the bees stimulated to brood-rearing, so as to have them rear lots of young bees; and I try to have them ready with a large lot of bees by the time the white clover comes in bloom, which is about June 20th with me; then I get them to work storing in the supers, and I seldom ever have any swarms at all; and, if any, they are rousing good ones.

After the white clover is past, or about over, I divide, if I wish increase. I work my bees mostly for extracted honey, although I have worked some for section honey also on this plan. One cannot control swarming

quite so well with section honey as for extracted, but with careful manipulation one may succeed even with section honey. I use the 10-frame hive exclusively. I am sure I could not be so successful in securing any kind of honey with a hive less than the 10-frame, as I want rousing colonies when I expect surplus honey, or even large swarms.

I have followed this plan for many years with good success. What I have done others may do. But I have not then been as successful as the report that Dr. Miller gives, or Mr. Doolittle. I think I do not give my bees as close attention as either of these leading bee-keepers, as I am much occupied with other business during the very time the bees need the most attention; but I try to give them as good as I can, not to neglect my other business, although I have never gone through a season yet but what I thought my success could have been much improved with more attention.

If you will remember, Mr. York, I gave my experience once in the Progressive Bee-Keeper, some years ago, stating that I had secured 200 pounds of honey per colony; but when my bees were at their very best on Spanish-needle, it turned so very dry and hot all at once that the nectar ceased very suddenly. If it had continued in bloom as it usually does for a longer period, I am sure my average would have been much better. You said in commenting upon my experience at the time that you would "like to know how much I was expecting." I have taken 200 pounds in three different seasons with my plan, and while my success has been much over the average, I have never thought that I did so very much, nor near the possibilities. This only shows that with good care, bees, or in fact any business, may be a success—at least very much better than the average.

J. W. ROUSE.

Mexico, Mo.

[Mr. Allen's plan was given on page 93, last month.—EDITOR.]

Bee-Keeping in Ontario

My bees wintered tip-top, only losing one out of 24 colonies, and that through putting on taffy not made hard enough, and it melted and smothered them. Never have my bees come through a winter in better shape, both in strength and stores.

The past season was the best, for both early and late flowers of honey, we have had for a long time in this section; no honey-dew of any sort, and bees went into winter quarters in first-class shape.

I winter my bees on the summer stands in chaff hives. They had no chance for flight this winter from the middle of November until the 6th of this month. We had a nice, steady winter with but three or four cold dips below zero, and then only for a day or two at a time.

TOM COOLEY.

Sheffield, Ont., Can., March 22.

Some Weather Prophecies

I have been quite amused to notice in the bee-papers about shaking energy into the bees, by prominent bee-men. It reminds me very forcibly of an old saying, which has been handed down through our ancestors from Switzerland to the present generation, and which is as follows:

First, when the bear comes out from his den of long sleep or hibernating, and sees his own shadow on Feb. 2d, or Candlemas Day, bruno will go back and remain in his den 4 weeks, if not 6 weeks.

Second, in the month of February the lion does not shake his head; then he switches his tail.

Third, if Mathias, on the 24th of the second month of the year, finds ice he will break it; if not, he will make it.

First, to understand that prophecy of our ancestors, may be accomplished as follows: Those mountaineers of Switzerland were thoroughly acquainted with the nature of bruno's winter quarters. Somewhere in the 70's, I had the privilege of taking a night's lodging on Candlemas Day with J. L. Byer of Mt. Joy, Ont., who owned a large bear. The following morning, the bear being burrowed in straw in the barn, made his appearance fastened to the barn-post with 15 or more feet of chain. The writer witnessed his action at the door of the barn, looking and sniffing for a few moments and then went back into the den again, it being very cold, as it was below zero, and we had our overcoats on to keep warm. As the sun was shining all day, the owner said that the bear would make his appearance again in 4 weeks.

Fifty years ago I had the privilege on Candlemas Day, it being cloudy, drizzling and

American Bee Journal

summerlike, of taking a gun and going squirreling. The coon, chipmunk or ground squirrel, and the like, were ransacking the bush, appearing like vernal life again. As chance would have it, myself and 4 other men with seine or draw-net on Candlemas Day, in '67 or '68, it being a very mild winter up to Feb. 2d, had done some fishing, it being a fine, warm day, and no ice on the fishing "ground," we fished a lot, of all kinds of fish with the draw seine, simply showing that one extreme can be followed by another.

Second, the lion has his play to perform as well as the bear, in as much as the sun enters constellation Capricorn, which places our earthship in constellation Leo or Lion on the meridian at midnight. Now, the lion being at home in a warm climate does not shake his head the first half of the winter, and it not being cold and stormy will switch his tail in the last half of the winter, representing the cat when mousing, the nearer the mouse will approach the more anxiety the lion will show as well.

Third. February 24th, called Mathias Day, the writer observed more than once that the winter Boreas didn't form much ice, and the February thaw made its appearance, and made it like spring weather. The white mantle was laid aside, both on land and water, so the ice-men lamented of having ice stored away. Mathias with Boreas in company showed their power; March 20th there were 10 or 12 inches of ice in inlet waters in shape for the ice-men to store up.

The bumble-bee and honey-bee give good forecast of the future weather. Last November there had been a pleasant squaw winter of 14 days duration, and the last 3 days of that month the honey-bees carried in pollen and some honey like dew. They have not had a cleansing flight since, but seem to do fine so far, most of the time being nearly covered with snow. The bumble-bee in wet summer weather has the nest made in sheltered places, and in hot summer weather in the ground to escape the summer heat.

In summing up the three prophecies, the whole creation is so interlinked that the wise observer can understand the financial welfare of the future, whether prosperity is in store or not.

J. M. WISMER.
Jordan Station, Ontario.

Wants and Exchanges.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

Eggs for Hatching.—Single Comb White Leghorns. Send for prices.
3A3t SAMUEL RAPP, Morton, Ill.

Golden Wyandots. Best and most beautiful chicken on earth. Stock and eggs for sale. J. R. DOUGLAS, Mound City, Kan. 3A3

RINGLET B. P. Rock Eggs from extra-light birds. First Pen, \$1.50 per 15 eggs. Second Pen, \$1.00 per 15.
4A2t E. E. MOTT, Glenwood, Mich.

WANTED—100 or more Colonies of Bees in Southern Wisconsin. State price, style of hive, and location. Address,
721 E. 50th St. 3d, Chicago, Ill.

WILL EXCHANGE GLADIOLI.—I have quite a collection of these flowering bulbs. To increase the same, I will exchange good blooming-size corms for varieties I have none of. I will also exchange Dahlias; only one tuber of a kind. What have you? Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

GLADIOLI AND DAHLIAS.—I have a splendid mixed collection of Gladioli in various colors, shapes and sizes that I am offering in bulblet form at 25 cents for 2 hundred, by mail. This is a good way to get a start by growing your own bulbs. Some will bloom the first year; the great majority the second year. Dahlia tubers, named kinds, 15 to 25 cents each. Address, W. A. PRYAL, 50th St., near College Ave., Oakland, Calif.

Our Book Notices.

By LEWIS EDWIN YORK,

Supt. Public Schools,

MARTINS FERRY, Belmont Co., OHIO.

British Poets of the Nineteenth Century.—By Curtis Hidden Page. Chicago: Benjamin H. Sanborn & Company. Cloth. 935 pages. Price, \$2.00.

Professor Page, of Columbia University, has selected and arranged the choicest poems of 15 British authors from Wordsworth to Swinburne, and the publishers have made a most delightful book that should have a place in every well-selected library. Most people do not read enough of poetry. Yet the habit is easily acquired. The results are astonishing. One's ideals are elevated. He inhales the ozone of a higher region. He finds uplift, inspiration, new energy for the common tasks of life.

Civics and Health.—By William H. Allen, Secretary of the Bureau of Municipal Research. Introduction by William T. Sedgwick. Illustrated. Chicago: Ginn & Company. Cloth. 410 pages. Price, \$1.25.

It is only within very recent years that we have come into possession of tested knowledge relative to health, sanitation, public hygiene, etc. The book at hand deals with this vital subject in a truly popular yet scientific way. Doubtless it will be the means of saving thousands of lives and of enhancing the physical welfare of multitudes. The chapter on "The Patent Medicine Evil" is worth many times the price of the book. A knowledge of health science is absolutely essential to the maintenance of abundant bodily health and strength. Get and read this book.

Primer of Sanitation.—By John W. Ritchie. Yonkers, N. Y.: World Book Company. Illustrated. Cloth. 200 pages. Price, \$1.50.

Newspapers and magazines are full of the subject of individual and public health. Rockefeller has given a million dollars to fight the hookworm, and President Taft has recommended the establishment of a public health bureau that shall be national. The average parent will find in this Primer just what is needed for a clear understanding of all the diseases that are common, such as measles, tonsillitis, scarlet fever, grippe, colds, etc.

Alexander Hamilton.—By F. S. Oliver. New York: G. P. Putnam's Sons. Cloth. 474 pages. Price, \$1.25, for students' edition.

Every careful reader likes to have a half dozen or more of the best of essays in his library. Here is a little volume with subtitle: An Essay on American Union. Its every page sparkles with the best output of a master English literary artist. The rise of political parties, the conflict of contending forces, the personal character of the leaders are all given in clear relief and admirable setting. No one can read this book without increasing his culture and getting a clear notion of the principles that governed the makers of our nation.

The Northwest Under Three Flags.—By Charles Moore. New York: Harper & Brothers. Illustrated. Cloth. 400 pages. Price, \$2.50.

The lover of history will find in this book, with its excellent map and pictures, the very thing to interest and inspire. The French, English and American flags have floated in succession over the Northwest. Out of this territory have been carved many States that are taking the lead in American affairs. In 10 absorbing chapters the author unfolds the story of the successive changes. To read the story of our country, and to know the heroism that was shown by our fathers in the winning of freedom mean the awakening of the best within us. We all need to learn the lessons of patriotism, protection and service, and this can be done best through the pages of history when the stories are told by men who have learned to see.

John Marvel, Assistant.—By Thomas Nelson Page. New York: Charles Scribner's Sons. Cloth. 573 pages. Price, \$1.50.

This is a marvelous book in many respects. It delineates in a most fascinating manner at least three very strong characters, of which John Marvel, the assistant rector of a wealthy Episcopal church, is the principal. While at times the language of certain characters in the book is anything but chaste, still, when the reader remembers the class

of people described, he can overlook those expressions. All in all, it is a strong book, and ought to help arouse a deeper interest in the poorer classes, and their conditions. It will repay a careful reading.

Our Clubbing List.

We have arranged with some of the best magazines and other publications to offer them in connection with a year's subscription to the American Bee Journal. If there are any others that you would like to subscribe for, be sure to let us know what they are, and we will quote you price. Our list so far as made up is as follows, the prices applying only to the United States, outside of Chicago:

American Bee Journal one year (75 cts.) Both

With American Agriculturist	\$1.00	\$1.75
" Bee-Keepers Review (new)	1.00	1.85
" American Poultry World .....	.50	1.40
" American Sheep Breeder	1.00	1.85
" Better Fruit	1.00	1.75
" Breeders' Gazette	1.75	2.45
" Canadian Bee Journal	1.00	1.85
" Century Magazine	4.00	4.75
" Circle Magazine, The	1.50	2.25
" Commoner, The	1.00	1.75
" Country Life in America	4.00	4.75
" Delineator, The	1.00	1.85
" Designer, The .....	.50	1.40
" Dressmaking at Home	1.00	1.85
" Etude, The (musical)	1.50	2.25
" Everyday Housekeeping .....	.50	1.40
" Everybody's Magazine	1.50	2.25
" Garden Magazine	1.00	1.85
" Gleannings in Bee Culture	1.00	1.75
" Good Housekeeping	1.00	1.75
" Guide to Nature, The	1.00	1.85
" Harper's Weekly	4.00	4.75
" House Beautiful, The	2.50	3.25
" Housekeeper, The .....	.75	1.50
" Human Life	1.00	1.75
" Ladies' Home Journal	1.50	2.25
" Little Folks	1.00	1.85
" Market Growers' Journal	1.00	1.75
" McCall's Magazine .....	.50	1.40
" McClure's Magazine	1.50	2.25
" Modern Priscilla .....	.75	1.60
" Mothers' Magazine .....	.50	1.40
" Munsey's Magazine	1.00	1.85
" Nat'l Stockman & Farmer	1.00	1.85
" New Idea Woman's Magazine .....	.50	1.40
" Ohio Farmer .....	.75	1.60
" Outing	3.00	3.75
" Popular Science Monthly	3.00	3.75
" Recreation	3.00	3.75
" Review of Reviews	3.00	3.75
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" Scribner's Magazine	3.00	3.75
" St. Nicholas	3.00	3.75
" Suburban Life	3.00	3.75
" Success Magazine	1.00	1.85
" Sunday-School Times	1.00	1.85
" Wallace's Farmer	1.00	1.85
" Woman Beautiful, The	1.00	1.75
" Woman's Home Companion	1.50	2.25
" World's Work	3.00	3.75
" World Today, The	1.50	2.25
" Youth's Companion (new)	1.75	2.50

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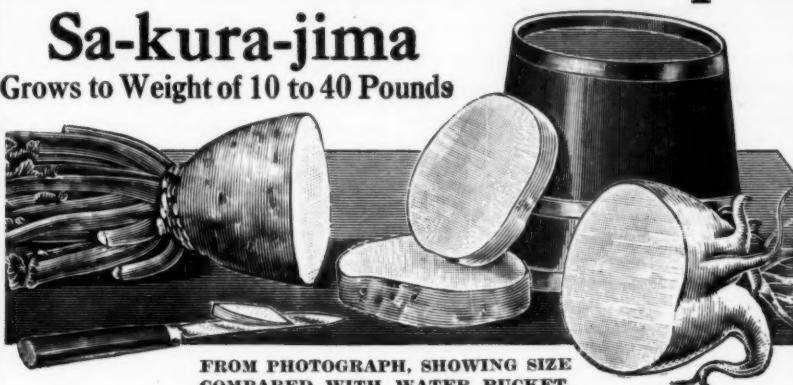


American Bee Journal

Giant Radish from Japan

Sa-kura-jima

Grows to Weight of 10 to 40 Pounds



FROM PHOTOGRAPH, SHOWING SIZE
COMPARED WITH WATER BUCKET.

Has Been Grown 1½ feet Long and 10 in. Diameter

This Giant Radish is a distinct novelty, in fact the greatest novelty of its kind ever introduced in America. The Fruit-Grower could hardly believe the stories told about this wonderful radish, so we sent out seeds for testing to our subscribers last year. We are "from Missouri," but we were certainly "shown" by our readers, for they grew radishes weighing all the way from **10 to 42 pounds**. The story of the growing of these Giants is told in February, our Gardening Number. Sample copies sent on request.

What do you think of a radish which grows to weigh 10 to 42 pounds, which is often a foot and a half long and 10 inches through; which is as tender and sweet during hottest July weather as earliest spring radishes; meat crystal white, solid, texture like a fine apple, and never becomes hot or pithy; which can be eaten raw like an apple, cooked like turnips, and pulled late in the fall, keeps all winter as sweet and crisp as when pulled. The tops, which grow 2 to 3 feet long, cooked as "greens," are to be preferred to spinach and mustard.

This describes the Giant Radish from

SEEDS FREE with a Trial Subscription to The Fruit-Grower

Appreciating the great value of this new radish, The Fruit-Grower has purchased practically **all of the seeds of this variety in the United States** to be distributed **FREE** to new subscribers. We canvassed the entire country, and it would not be possible to secure more seeds, even from Japan.

The seed is not for sale at any price, but we will mail a trial packet free to every one who sends 50c, coin or stamps, for a year's trial subscription to The Fruit-Grower. Regular rate \$1.00, but we offer it to you at half price, to get you interested, and convince you that we have the best paper of the kind in existence.

Send for a free copy of February, annual

THE FRUIT-GROWER, Box R-701, St. Joseph, Missouri

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The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp: 50 copies for 90 cents; 100 copies for \$1.50; 250 copies for \$3.00; 500 for \$5.00; or 1000 for \$9.00. Your business card printed **free** at the bottom of front page on all orders for 100 or more copies.

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Chicago, Ill.

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

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AUTO-SEAT BUGGIES ARE NOW ALL THE POPULAR RAGE

Great improvements have been made in this year's latest styles of auto-seat buggies including the sunken-panel auto-seat, giving a very fine effect in the back—as these panels can be painted the same color as the gear, if desired, or of a different color than the rest of the seat making a very attractive contrast.

Automobile style seats within the last two years have become very popular for vehicles of all kinds, on runabouts, buggies and on surreys. But one of the most popular automobile seats

are those arranged with quick shifting attachments, where they are furnished on top vehicles, so that the tops can be instantly removed, thereby converting the vehicle into a stylish open run-about style without leaving irons or lugs on the seat when the top is off, as with old style vehicles.

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Manufacturer of Celebra-
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On this style auto-seat buggy one can take off or put on the top less than five minutes.

We believe that our readers will be interested in seeing the illustrations and the descriptions of these latest auto-seat improvements on all style vehicles as explained in the handsomely illustrated catalog of The Ohio Carriage Mfg. Co., makers of the celebrated "split hickory" brand vehicles, also of high grade harness—whose factories are located at Columbus, Ohio. In this book, showing over 125 latest styles of vehicles for 1910, you can read full descriptions of more buggies and a larger line of harness than you could see displayed in ten big salesrooms. It is a regular "buyer's guide," a library of information on the question of making and selling vehicles and harness, explaining fully how everyone can make large savings by buying direct from the factory.

This company is so well known to our readers that it is not necessary for us to do more than suggest that it will pay you to write a postal for this latest catalog. The company advertises to save its customers from \$26.50 upward on any vehicle—making just what you want to your order and shipping it direct from their factories on 30 Days' Road Test and Full 2-Years' Guarantee.

We have never known of their not doing exactly as they advertised. Better write and ask for this book which is illustrated this year in colors. Simply a postal addressed to Mr. H. C. Phelps, President, The Ohio Carriage Mfg. Co., Station 322, Columbus, O., will bring it to you by return mail, postpaid.

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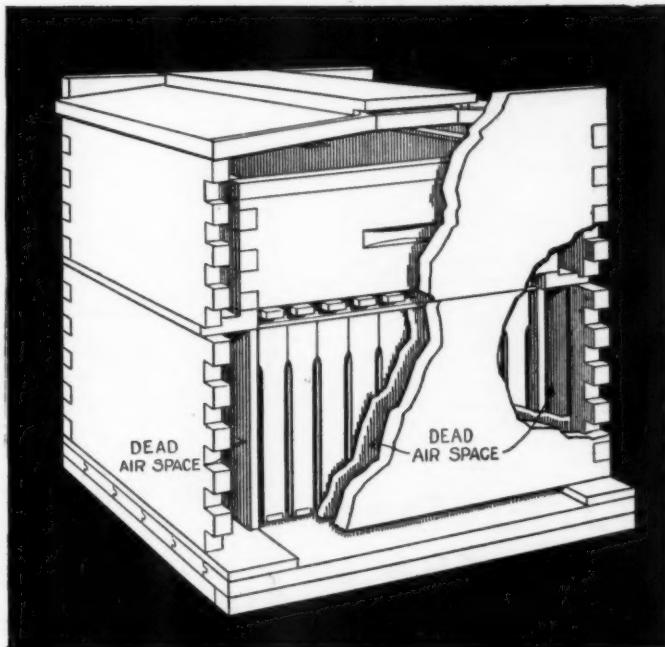
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All arguments lead to a matter of protection, look where you may. Dead-air-spaces or packing, as you prefer.

The hive that is sold at less than the material in it will cost you at your local lumber-dealers, equally good stock being used.

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Our stock is Northern-bred and hardy.

Our five yards Winter on Summer stands with practically no loss.

One of our customers tells us he has become one of the largest honey-producers of the West, and says that in a great measure his success is due to our stock.

Prices before July 1	1	6	12
Select queens.....	\$1.00	\$5.00	\$0.00
Tested queens.....	1.50	8.00	15.00
Select tested queens.....	2.00	10.00	18.00
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Golden 5-band breeders.....	6.00		
2-comb nuclei, no queen.....	2.50	14.00	25.00
2-comb nuclei.....	3.50	20.00	35.00
Full colonies on 8 frames.....	6.00	30.00	

Colonies and Nuclei, if shipped before June 1st, add 25 percent to above price; also add the price of whatever grade of queen is wanted with same. Safe arrival guaranteed.

Quirin-the-Queen-Breeder, Bellevue, O.



Please mention Am. Bee Journal when writing.

X Caucasians, Carniolans, Banats, Cyprians X

Select untested queens, \$1 each; 5 for \$4. Imported breeding queens, \$5 to \$6. Send to original importer and get genuine stock.

J. L. STRONG,
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For many years I have been selling bees and queens, and guaranteeing satisfaction in every way. I will be in the business more extensively than ever during the season of 1910. I have mailed queen-bees practically all over the world. My prices the coming season will be as follows, for Italian

BEES

Full colonies with Tested Queens, in 8-frame Langstroth hive, \$7.00 per col.; in same hive with 10 frames, \$7.50. Colonies in lots of 5 or more, 25 cents per colony less.

NUCLEI

One 3-Hoffman-Langstroth-frame Nucleus, \$2.50; in lots of 6 or more at \$2.25 each; price of queens to be added. Orders for nuclei filled about May 10th to 15th, and thereafter.

QUEENS

Tested Italian, each \$1.50; 6 for \$7.50; or \$13.00 per dozen.

I have 50 choice Italian breeding-queens, either golden or leather-colored, at \$2.50 each. "First come first served."

Untested Queens After May 15

Italian (warranted) 75 cents each; 6 for \$4.00; or \$7.50 per dozen. Carniolan or Caucasian at the same prices.

If you have never had any of my Bees or Queens, you should give them a trial. Satisfaction guaranteed. Address all orders to

ARTHUR STANLEY,
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Good Queens

If you are going to want any Queens for increase, or replacing old queens next June, it is time to begin to think about it. I have been breeding leather-colored Italian queens for years, and they are giving excellent satisfaction. If you are interested, write. Good queens; no disease; prompt shipment, and absolute satisfaction guaranteed. Prices: June, one, \$1; three, \$2.50; six, \$4.75; doz., \$9.00; 20 or more at 60c each.

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All from Extra-Select Mothers,
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38 Years' Experience in Queen-Rearing.
Breed Three-Band Italian Queens Only.

November 1st to July 1st	July 1 to Nov. 1	Select Breeder	\$4.00
I	6	12	Nuclei; no queen 1 fr
Untested.....\$1.00	\$5.00	\$ 0.00	2.00
Select Untested..1.25	6.50	12.00	3.00
Tested.....1.75	9.00	17.00	4.00
Select Tested....2.50	13.50	25.00	8.00

Select queen wanted and add price to price of nucleus or full colony.
For queens to be exported, add 20 percent to these prices, except to Canada, Cuba or Mexico.

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MILLER AUTOMATIC DECAPPERS
\$5 to \$35. Catalog Free.
APICULTURAL MANUFACTURING CO.,
Providence, R. I. 7Atf

Please mention Am. Bee Journal when writing.

MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for Sections. A large stock on hand. Also a Full Line of Bee-Supplies. We make prompt shipments.

MARSHFIELD MFG. CO.,

Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville, Gregory & Son, Ottumwa.
KANSAS—S. C. Walker & Son, Smith Center.
MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.
S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.

ARIZONA—H. W. Ryder, Phoenix.
MINNESOTA—Northwestern Bee-Supply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile Co., Cumberland.
J. Gobeli, Glenwood.

ROOT'S GOODS

for 1910 are better than ever. We carry full line of them.

MR. BEEMAN, take notice! For low freight and quick service our location cannot be excelled in the State. Don't delay. Order now. You can be saving your honey crop while the tardy fellow is waiting for his goods to arrive.

Our 1910 Bee-Line

is of the best. We are making a specialty of high-grade untested queens from a famous strain of honey-gatherers, at \$1.00 each. Order now, and be sure to get one for our delivery after May 15, 1910. Remember that cheap queens and poor blood do not pay.

Rea Bee & Honey Co.,
Reynoldsville, Pa.

Please mention Am. Bee Journal when writing.

Standard-Bred Queens!

Reared from our Superior Golden and banded Italian stock. The cells are all built in very strong colonies. Our Queens produce bees that store from 150 pounds in Colorado to 250 pounds in N. Y. State, with but little swarming. Queens ready April 1st: Untested, \$1.25 each; 6 for \$6.00; 12 for \$10. Tested, \$1.50 each; Select Tested, \$2.50; Breeders, \$5.00.

Full colonies and Nuclei for sale.
Mr. F. M. Jones, of Lockport, N. Y., writes as follows about our Queens and Bees:

LOCKPORT, N. Y., Sept. 9, 1908.
MR. T. S. HALL, Jasper, Ga.

Dear Sir:—Your letter of the 2d received. I have taken only a part of the honey. The bees are gathering honey very fast. The most of the colonies are yellow as gold and very gentle. I think your Italians are very gentle. I bought 2 dozen from another breeder 1st of July. They are not as gentle as yours. You must remember. I had only 45 colonies of bees last spring—7 strong ones and 38 very weak ones that I would have lost if the cold weather had lasted two weeks longer. Some of them did not have bees enough to cover one frame, and yet their crop will be about 3 tons of white honey. I know you would like to know how I increased to 134 colonies. I had 2 of them swarm out, and I made 14 nuclei from them, and put your young queens with them. I had 5 swarms of black bees come to me and go in the empty hives about the 1st of June. After they had been in the hives 3 weeks I divided them into 20 nuclei and killed the black queens and put in 20 of your nice young Italian queens with them. The rest of the colonies I made by taking frames of hatching brood from the old colonies and putting them in empty hives. I could not have made that increase without the aid of all drawn-out combs ready for the bees. The strongest colonies had 5 stories to the hive, 8 frames each—40 frames all together; 8 frames of brood, 32 frames of honey, 8 lbs. of honey to the frame. 256 lbs. of white honey from the strongest colonies. They have 2500 pounds of honey on their hives now. Sept. 9th. Our Fair was last week. I got \$38.50 in premiums on bees and honey; \$5 for the best Italian queen.

Yours truly,
F. M. JONES.

Discount given on large orders. Price-list ready soon.

T. S. Hall, Jasper, Pickens Co. Ga.

Please mention Am. Bee Journal when writing.

M. H. HUNT & SON

The best time to buy your goods is during the fall and winter months. We are making Liberal Discounts for Early Orders, and would like to quote you net prices on your needs for next season.

—BEESWAX WANTED—
LANSING, - MICHIGAN.

Bee-Supplies

Distributor of Lewis' Bee-Supplies at Factory Prices in Iowa. Also Red Clover and Leather-Colored Italian Queens; and the Folding Berry Boxes, and the old-style Boxes.

Beeswax wanted. Send for Catalog.

W. J. McCARTY, Emmettsburg, Iowa

Please mention Am. Bee Journal when writing.

American Bee Journal

Root's Goods in Chicago

Last April we moved to this location. We were unable then to arrange our stock as we desired as the busy season was upon us. April, 1910, finds us in better shape than we have ever been since the opening of this office.

Our stock is now conveniently arranged, hence no confusion in filling orders. We now have on display in our show-room a complete line of our supplies. Call and see them. From this date we will have cars from the factory about every 10 days.

Have you received our catalog for 1910? If not, we want you to have it. A postal card request will bring one.

Gleanings in Bee-Culture

If you have not seen a late copy of our paper, which is issued twice each month, you can't tell from a brief description how much valuable information each issue of it contains. Each issue is fully illustrated. Our writers are the very best. A trial subscription of six months (12 different copies) will cost you only 25 cents.

Alexander's Writings

Mr. Alexander was one of the largest, if not the largest, bee-keeper in the United States, and what he has told of his methods must necessarily be of interest to large bee-keepers. He kept bees for over 40 years, and produced honey by the carload. His writings are practical, and what he has done others may do if they care to follow his teachings. Here is what a prominent bee-keeper says of his book:

"Alexander's Writings are the best thing I ever read; practical, enthusiastic, sympathetic, encouraging. I predict an enormous sale of the book. Why not get out an edition with cloth cover? It's worth while. Wish you could print more such books."

WM. BAYLEY.
43 N. Brighton Ave., East Orange, N. J.

This Book is Sold only in combination with Gleanings

From now until January 1, 1911, we offer one copy of the Alexander book with every yearly subscription

to GLEANINGS, new or renewal. You get BOTH for subscription rate alone, which is only \$1.00.

Canadian postage, 30 cts.; foreign postage, 60 cts. per year extra.

Power Extractors

We believe all of our extractors are about as near perfect as it is possible to make them. For large aparies one of our power machines is a great advantage. A circular of these will be sent upon request.

Read what a large producer says:

LANG, CALIF., Sept. 26, 1909.

Gentlemen:—Owing to the fact that power extractors are not in general use at the present time, it may be of interest to you to know that I used a Gilson engine "I. H. P." together with the latest model of the 6-frame automatic extractors, "Roots," for this season's extracting. I was surprised and delighted with the work done. In extracting our heavy white-sage honey it not only cleans out the combs much cleaner than can be done by hand-power, but does it at a minimum of expense. The cost of gasoline and oil used being only 16¢ per ton of honey extracted. It takes the place of a man at \$40 per month and board, so one can readily see that it much more than paid for itself in the one season, besides doing much better work than could be otherwise. The above cost of extracting is given on the basis of gasoline at 25¢ per gallon, which is the cost here.

Truly,

H. A. SLAYTON.

Our Aim for the Season of 1910

This year we aim to give our customers the very best possible service. Remember, for low freight rates and quick delivery, Chicago is as well located as any city in the United States.

Our Location and How to Reach It

The A. I. Root Co. INSTITUTE PLACE.

213-231

One block north of Chicago Ave., cor. Franklin St. Take any car going north on Wells St. Get off at Institute Place, $\frac{1}{2}$ block west to Jeffery Bldg. Take elevator to 6th floor. Or take N. W. Elevated to Chicago Ave. and walk $\frac{1}{2}$ block north on Franklin St. Tel. North 1484.

WASHINGTON QUEENS!

Wurth's Best Queens are as good as money can buy.

I have leased all of Sires Bros. Co.'s bees, with the exception of 100 colonies. I have control of seven hundred colonies of bees, and have the largest and best queen-rearing outfit in the State, with 40 years' practical experience.



Bee-keepers from any part of world need not hesitate in sending me their orders, as they will get the best queens that can be reared under the latest and best improved methods.—

Safe delivery and satisfaction guaranteed.

Prices of Either Golden or 3-Banded Queens.

Untested, \$1 each; six for \$5; 1 dozen for \$9.75. Tested, \$1.50 each; three for \$4.25; six for \$8.25; 1 dozen for \$15.

Select Tested, \$2 each; three for \$6.75; six for \$10.

Queens ready to send by return mail. Send all orders to—

DANIEL WURTH,

4Atf Rt. 1, WAPATO, WASH.
Please mention Bee Journal when answering this advertisement.

Elkhart Buggies

are the best made, best grade and easiest riding buggies on earth for the money.

FOR THIRTY-SEVEN YEARS

we have been selling direct and are The Largest Manufacturers in the World selling to the consumer exclusively.

We ship for examination and approval, guaranteeing safe delivery, and also to save you money. If you are not satisfied as to style, quality and price you are nothing out.

May We Send You Our Large Catalogue?

Elkhart Carriage & Harness Mfg. Co., Elkhart, Indiana



Please mention Am. Bee Journal when writing.

Golden Queens NOW READY

Virgins, 50c; Untested, 75c; Select Untested 90c; Tested, \$1.00; Select Tested, \$1.50.

Write for prices on 6 or more. 4A3

A. I. Davis, Del Rio, Tex.
Please mention Am. Bee Journal when writing.

Sweet-Potato Seed

Direct from storage to consumer. Sound, bright stock. Yellow Jersey at \$1 per bushel measure. Discount on large lots. Other varieties. Write for descriptive price-list.

L. H. Mahan, Box 143, Terre Haute, Ind.
Please mention Am. Bee Journal when writing.

New England Bee-keepers!

New Stock at Factory Prices

—: PROMPT DELIVERY:—

Cull & Williams Co.

Providence, Rhode Island.
Please mention Am. Bee Journal when writing.

DOOLITTLE & CLARK

Are now booking orders for Italian Breeding Queens, at \$2.50, \$5.00 and \$10.00 each. These Queens are mated to Selected Drones. Send for Circular.

4A2t Borodino, Onondaga Co., N. Y.
Please mention Am. Bee Journal when writing.

Golden and Red-Clover Queens...

From Extra- Selected Mothers

Untested, 75c; six for \$4.00.
Selected Untested, \$1.00; six for \$5.00.

Tested, \$1.50.
Safe arrival guaranteed. Twenty-one years' experience. Send your orders to—

E. A. Simmons, Greenville, Ala.
Please mention Am. Bee Journal when writing.

American Bee Journal

CAPON TOOLS



CAPON bring the largest profits—100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use
PILLING CAPONIZING SETS
Postpaid \$2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make Poultry Marker 25c, Gape-Worm Extractor 25c French Killing Knife 60c. Capon Book Free. G. F. Pilling & Son Co., Philadelphia, Pa.

Please mention Am. Bee Journal when writing.

Messrs. BEE-MEN, Honey-Producers & Co.

Has your concern our 1910 catalog?

How do you expect to do business without it?

We want it on the desk of every good buyer of goods wanted for **BEES**—

whether he operates one hive or one thousand. Our prices are right, and the freight from

TOLEDO

—well, you know what this means. We want to call your attention to the back cover of our Catalog, and will ask you to pin this to your mind. It means something to honey-producers.

Beeswax wanted — Cash or in Trade.

The GRIGGS BROS. CO.
24 North Erie St.,

TOLEDO, OHIO.

The Practical **BEE AND CHICKEN** Men

Again to the Front with The Famous Banats



Having moved my Banat Apiaries from Sabinol to San Benito, Texas, I am now better prepared to furnish High Quality

QUEENS

and guarantee them pure-ly mated. Prices: Untested Queens, each, 75c; per doz., \$8.00 Tested Queens each \$1.25; per doz., \$12.00.

My stock is pure and free from disease—the gentlest bees on earth.

GRANT ANDERSON,
2Atf SAN BENITO, TEXAS.

Cook's Honey-Jar.

With patent AIR-TIGHT SANITARY STOPPER is the Best and Cheapest Honey-Jar made. Sold by

J. H. M. Cook, 70 Cortlandt St., N. Y. City.
Send 10 cents (half postage) for sample Jar, and catalog of WELL-BRED BEES, QUEENS, HIVES, etc.

The oldest Bee-Supply Store in the East.
2Atf



"If goods are wanted quick, send to Pouder"

ESTABLISHED 1880.

BEE-SUPPLIES

Standard Hives with latest improvements; Danzenbaker Hives, Sections, Foundation, Extractors, Smokers, Veils, and a complete stock of

Root's Standard Goods at Factory Prices

My equipment, my stock of goods, and my shipping facilities, cannot be excelled, and I ship goods to every State in the Union. Illustrated and descriptive catalog mailed free.

Finest White Clover Honey

on hand at all times. I Buy Beeswax.

859 Massachusetts Ave.

HAND-MADE SMOKERS

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker we recommend above all others.

U. S. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.....	\$1.50	4 inch stove
Doctor—cheapest made to use	1.10	3½ "
Conqueror—right for most apiaries	1.00	3 "
Large—lasts longer than any other.....	.90	2½ "
Little Wonder—as its name implies .....	.65	2 "

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Alma, Mich.



Patented, May 20, 1879. **BEST ON EARTH.**

LEWIS BEEWARE — Shipped Promptly

SEND FOR NEW CATALOG

Extracted Honey for Sale.
(Ask for Prices.)

Beeswax Wanted.
28c Cash—31c Trade.

ARND HONEY & BEE-SUPPLY CO. NOT INC.

(Successors to the York Honey & Bee-Supply Co.)

H. M. ARND, Proprietor.

148 West Superior St., CHICAGO, ILL.

BETTER FRUIT

The best fruit growers' illustrated monthly published in the world. Devoted exclusively to modern and progressive fruit growing and marketing. Northwestern methods get fancy prices, and growers net \$200 to \$1000 per acre. One Dollar per year. Sample copies free.

Better Fruit Publishing Co. HOOD RIVER, OREGON.

Honey Wanted.

All grades of Comb and of Extracted. 2000 cases of Buckwheat Comb wanted at once. What have you to sell? Third car of water-white Sage just in. Write for prices.

THE GRIGGS BROS. CO.
2Atf TOLEDO, OHIO.



FENCE Strongest Made

Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free.

COILED SPRING FENCE CO.

Box 89 Winchester, Indiana.

Please mention Am. Bee Journal when writing.

American Bee Journal



Established 1885

We carry an up-to-date
Line of**Bee-Keepers'
Supplies**

Prices the lowest in the West.
Write us for our 50-page catalog,
ready to mail you. Free for the
asking. We can fill your orders
promptly and satisfactorily. Our
old customers know what we
handle; to new ones we can say
that we have

The Best Make of Supplies

hence there is nothing to fear as
to quality.

Send us your rush orders and get
your goods before swarming time
arrives.

Bees and Queens in their season.
Beeswax taken in exchange for
supplies or cash.

**John Nebel & Son
Supply Co.**

High Hill, Montg. Co., Mo.

Alsike Clover Seed.

Small and large Red, Alfalfa, and Timothy
Seed for sale. Seed re-cleaned and choice.
Write for prices.

Catalog of APIARIAN SUPPLIES FREE.
Address,

F. A. SNELL,

2A3 MILLEDGEVILLE, Carroll Co., ILL.
Please mention Am. Bee Journal when writing.

Of Interest

FOR the past 50 years New
England bee-keepers have
purchased Bees, Queens, Bee-
hives, Supers, Section - boxes,
Comb Foundation, Smokers,
Honey-jars, and other necessary
bee-supplies, of the Reliable and
long-established firm of W. W.
Cary & Son.

I have recently purchased the above
business, and will continue it at the
same place as before. I have been
associated with the firm for the past
eight years, and have had experience
in all branches of the business.

I have a fresh supply of the A. I. Root
Co.'s goods, which I am able to supply
you upon short notice. Send in your
orders early and I will give them my
best attention.

4At

Send for Bee-Supply Catalog.

EARL M. NICHOLS,

(Successor to W. W. Cary & Son)

Lyonsville, - Massachusetts

For Sale 12 Indian Runner Duck eggs, \$1.00;
15 White Wyandotte eggs, \$1.00;
25 Rose Comb Rhode Island Reds, \$1.50. 2A3t
J. F. MICHAEL, Rt. 1, Winchester, Ind.

Write Us To-Day

for our 1910 Catalog and let us tell you all about

DITTMER'S COMB FOUNDATION and WORKING Your WAX for You.

→ Write us for Estimate on full Line of
Supplies. It will pay you, and costs nothing.

RETAIL and WHOLESALE.

Gus Dittmer Company, - Augusta, Wisconsin.

**BARNES' Foot-Power
Machinery**

Read what J. L. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 shaft hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.



Latest Improved Hives &
Supplies. Disc't on early
order. Catalog free. Send
25 cts. for 90-page Bee-Book
for beginners.

**J. W. ROUSE,
MEXICO, MO.**

AGENTS: — IF I KNEW YOUR NAME, I
would send you our \$2.19 sample outfit free this
very minute. Let me start you in a profitable
business. You do not need one cent of capital.
Experience unnecessary. 50 percent profit. Credit
given. Premiums. Freight paid. Chance
to win \$500 in gold extra. Every man and woman
should write me for free outfit.

9At Jay Black, Pres., 305 Beverly St.; Boston, Mass.

**RANE
CELLULAR
CASES****Mr. H. W. Coley, of Westport, Conn., writes us:**

"I am using your Corrugated Paper Cases for shipping comb honey
in, this year, and like them. On one shipment last year of six wooden
cases packed in a carrier with a straw cushion, the greater part were
ruined. This year the same quantity shipped to the same place in your
cases went through without a broken comb."

1. The first cost of the Paper Cases is less.
2. He saved the cost of the carriers.
3. He saved the time of making the carriers.
4. He saved the weight of the carriers.
5. The Paper Cases weigh less than wooden ones.
6. They can be assembled in one-half the time it
requires to set up a wooden case.

Send for our Circulars and let us tell you what some of the other large
producers and dealers say.

Do not take our word for the value of this new Case.

Plan to order early. Some were disappointed last year.

J. E. Crane & Son, Middlebury, Vt.

American Bee Journal

Honey and Beeswax

CHICAGO, March 28.—The season is now about over for the sale of comb honey in large quantities, but it finds the market well cleaned up, and prices are steady at from 12@18c on A No. 1 to fancy white, and from 1@3c less for the lower grades. Extracted honey is meeting with only fair sale, and the prices are inclined to be easy, with white selling at from 7@8c, according to kind, body and flavor; ambers from 6@7c; with dark grades bringing about 6c. Beeswax is in active demand at 32c per pound.

R. A. BURNETT & CO.

INDIANAPOLIS, March 28.—There is a good demand for best grades of honey, but none is now being offered by producers. Dealers are fairly well supplied with one grade of comb, which is fancy white, mostly from Michigan, and 18c is the price asked. Finest white clover extracted is being sold by dealers in cases of two 60-pound cans at 10c per pound. Producers of beeswax are receiving 29c cash, or 31c in exchange for goods.

WALTER S. PODUER.

TOLEDO, March 30.—There is not much change in the honey market since our last quotations. The demand is fair for this season of the year. Fancy and No. 1 brings 16@17c per pound in a retail way, depending on the quantity bought. No demand for dark or amber grades. Extracted is in fair demand, as follows: Sage brings 8@9c; white clover, 9@10c; amber, 6@7c; dark, 5@6c. Beeswax is in good demand at 32c; fancy yellow, 33c. These are our selling prices.

THE GRIGGS BROS. CO.

NEW YORK, March 28.—Very little doing in comb honey. There is some demand for No. 1 and fancy white. We are receiving small lots right along, which evidently have been held back. Off grades are in very poor demand, and no demand for dark or buckwheat. Strictly fancy and No. 1 white will

still bring 14c, while off grades and mixed will not bring over 11@12c, according to quality. For extracted, demand is fair only, with sufficient supply especially of California. quote: Water-white sage, 9c; white-sage, 8@8½c; light amber, 7@7½c; amber, 6@6½c. Cuban and West India, from 6@7½c a gallon, according to quality. Beeswax steady at 30c per pound.

HILDRETH & SEGELEN.

CINCINNATI, March 28.—The market on comb honey is bare. Extracted honey is in good demand. Sage, in 60-pound cans, 8½c; amber, in barrels, 6½@6¾c. Beeswax in fair demand at \$33 per 100 pounds. These are our selling prices, not what we are paying.

C. H. W. WEBER & CO.

KANSAS CITY, MO., March 28.—There is no comb honey in the jobbers' hands; and very little in the retailers'. The supply of extracted is not large, demand fair. We quote: No. 1 white comb, 24 sections to case, \$3.75; No. 2 white and amber, \$3.50. White extracted, per pound, 7c; amber, 6½@6¾c. Beeswax, 25@28c.

C. C. CLEMONS PRODUCE CO.

BOSTON, March 28.—Fancy white comb honey at 10@11c; No. 1, 15@16c. White, extracted, 8@9c; light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c.

BLAKE, LEE CO.

ZANESVILLE, OHIO, Mar. 20.—The demand for honey continues about normal. As the new season approaches there is a disposition on the part of producers to make concessions in prices, though but little is being offered now. Producers should receive here, first-hand, for best white comb, 15@15½c, delivered; and for best grades of extracted, 8½@9c. In a wholesale way, the usual margin of about 2c on comb, and 1@2c on extracted, prevails. Beeswax of good quality yields the producer 28c cash; 31c in exchange for merchandise.

EDMUND W. PEIRCE.

Baby Chicks 8 cts. each. Eggs for hatching, \$4 per 100. All kinds poultry at lowest prices. Guarantee safe arrival anywhere. Write for price-list.

10A6t
CULVER POULTRY FARM 1015 Road, BENSON, NEBR.

As Usual—

MR. C. H. W. WEBER,

Cincinnati, Ohio.

DEAR SIR:—Your consignment has arrived all O. K., and I find everything I ordered. I wish to extend many, many thanks for your promptness and fair dealing. All future orders will be sent to you.

Very truly yours,

W. A. MOORE.

FRANKLIN, TENN., Feb. 19, 1910.

I want you to notice Four Things in the above Letter :

I.—The goods reached Mr. Moore O. K. We know how to pack carefully and securely, and without any useless weight.

II.—He found everything ordered. We carry large stocks always on hand, and our system of checking prevents annoying mistakes.

III.—The advantages we have for prompt delivery are unsurpassed. If you want goods quick, send to Weber.

IV.—Fair dealing is now and always has been our motto.

CATALOGS have been mailed to nearly all our customers. If you have not received yours, send us a line and we will get one to you by return mail.

Yours for service,

2146 Central Ave., Cincinnati, Ohio.

C. H. W. WEBER & CO.

FALCON FOUNDATION

Years of experience in the manufacture of

FALCON COMB FOUNDATION

have made it PERFECT.

Bees like it, and the foremost

Honey-Producers Use It.

It helps materially to increase the

Honey Crop

(Send for our new Catalog.)

Ship us your

BEESWAX

to FALCONER, N. Y.

Will send shipping-tags, when you write asking for quotations.

We pay highest market prices.

W. T. FALCONER MFG. CO.

JAMESTOWN, N. Y.

SUPERIOR BEE-SUPPLIES

Specialy made for Western bee-keepers by G. B. Lewis Co. Sold by Colorado Honey-Producers' Association, DENVER, COLO.

BEE-KEEPERS OF THE NORTH

Be Sure to get our PRICES on

■ BEESWAX

Before selling your season's Wax
or
Let us send to you our prices for
Working your Wax into

DADANT'S FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash and trade prices.**

During the season of 1909 we handled over 175,000 pounds of Beeswax.

DADANT & SONS, Hamilton, Illinois.

BEE-SUPPLIES OF ALL KINDS.

We Keep Only the Best.

Let us Figure on
Your Season's Supplies

1910 CATALOG

Now Ready,
and Free for the Asking.

BEE-KEEPERS OF THE SOUTH

Established 1864

Bee-Keepers' Supplies

¶ We manufacture and furnish everything needed in practical, up-to-date BEE-Culture at the very lowest prices. We make the celebrated **DOVETAILED HIVES** and the famous **MASSIE HIVES**. These are the most practical, up-to-date Bee Hives made and our extremely low prices place them within the reach of all bee-keepers. Our **HONEY EXTRACTORS** and **BEE SMOKERS** are the very best that can be had anywhere. *We guarantee satisfaction to every customer or refund your money and pay the transportation charges both ways.* This means that you can send back to us any goods you buy from us that are not satisfactory. We will exchange them or refund your money instantly without a question.

¶ If you haven't one of our **CHAMPION SMOKERS** you don't know what a good one is until you get one, (sample by mail \$1.00).

¶ Write today for our large illustrated catalog — it is free; it is one of the easiest catalogs to order from that you ever saw. *Remember our guarantee of entire satisfaction.*

¶ Write us for prices on any orders. *We can save you money.*

Kretchmer Mfg. Co., Council Bluffs, Iowa